

City of Berkeley Communications Center

Needs Assessment and Recommendations Report

October 25th, 2022

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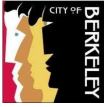
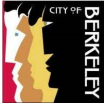


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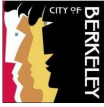
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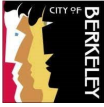
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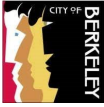
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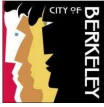
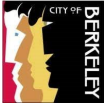


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Executive Summary

Federal Engineering, Inc. (FE) is pleased to provide the City of Berkeley with this report concerning the current conditions, needs assessment, and initial findings of the Berkeley Emergency Communications Center (ECC).

To prepare this report, **FE** followed a data collection process which included the submission of a Request for Information (RFI), a data collection survey tool (survey), and formal stakeholder interviews and focus group meetings. The information and data collected via the survey and the user and stakeholder input, was then analyzed by **FE's** subject matter experts (SMEs), who applied their collective experience and knowledge of industry best practices and standards towards the development of this Assessment.

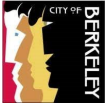
The intent of the system observations, analysis, and recommendations found in this report is not to be an all-inclusive list of everything mentioned or discovered during **FE's** virtual interviews, staff meetings, and system component descriptions. The intent is to provide Berkeley management and the stakeholders with a high-level overview of the most common or frequently heard comments, concerns, or observations, as well as an actionable list of next steps towards a path forward. An all-inclusive list of deficiencies, enhancements, and applicable recommendations will be included in the new system's functional requirements, the next logical step for the City to take, as the follow-on initiative of this project.

Based on the various meetings, individual interviews, observations, review of existing documentation and the survey results, **FE** gained an understanding of the operations, service requirements, workflow processes, training programs, and deficiencies of the ECC.

The scope of work of this project includes current state, requirements gathering, needs assessment, and recommendations for the ECC, including an evaluation of Berkeley's efforts to "Reimagine Public Safety," as well as a recently conducted feasibility study for a Specialized Care Unit (SCU). This effort is designed to include an alternative mental health and substance use crisis response model that does not involve law enforcement.

The findings from this review and interaction served to benchmark the current conditions at the ECC. A description of the analysis and review, supporting narrative and references, and recommendations based on these standards and best practices, as well as our experience, formed the content of this report.





1. Introduction

1.1 Background

Federal Engineering, Inc. (FE) was contracted to provide the City of Berkeley (the City) with professional consulting services to conduct a needs assessment and strategic planning effort for the Berkeley Communications Center (ECC). The focus of the initiative is to assist in transitioning the ECC to a prioritized fire and medical dispatch system through a needs assessment based on trending call volumes into the ECC, as well as identifying products/solutions that are the best fit for the City.

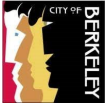
The ECC functions as a primary Public Safety Answering Point (PSAP) for the City of Berkeley and is operated under the command of the Berkeley Police Department. The ECC is part of the Support Services Division of the Berkeley Police Department, overseen by a sworn police captain. The ECC is staffed 24 hours a day, 365 days of the year by a team of well-trained Public Safety Dispatchers (PSDs) under the direction of a non-sworn Communications Center manager.

The ECC receives and dispatches all emergency and non-emergency police, fire, and medical calls for the greater Berkeley community. The ECC also provides fire dispatching services for the University of California (Berkeley) campus. While medical calls are dispatched by the ECC, today they are transferred to Alameda County Regional Emergency Communications Center (ACRECC) who is contracted by City of Berkeley for the provision of International Academy of Emergency Dispatch (IAED) Emergency Medical Dispatch (EMD)[™] processing and relevant Pre-Arrival and Post-Dispatch Instructions. This is a requirement for ALS funding in agencies within Alameda County. Berkeley Fire Department is looking to implement EMD call-taking in the Berkeley ECC, thus it is one of the primary focus areas of this study and report.

1.2 Methodology

To successfully conduct a comprehensive analysis and operational needs assessment of the ECC an understanding of the current state related to operations, systems, and infrastructure is imperative. The Berkeley community is unique, and there must be a thorough understanding of the intricacies of the workflow and relationships between, and within, agencies to identify opportunities for improvement, develop a future vision for solutions, and guide the City of Berkeley through implementation and cutover to new processes, technologies, or systems. To answer questions driving this evaluation, a





mixed-methods approach is required. Part of the methodology involves analyzing the ongoing reporting data captured by the **FE** Data Collection Survey Tool.

To build interest, ownership, and engagement for the assessment and change vision, stakeholders were approached to participate in on-site and remote interviews to provide qualitative data on current state including organizational structure, process, workflow, challenges, and opportunities for growth. These interviews were conducted to develop a thorough understanding of the unique technological and staffing aspects of the Berkeley ECC operation, as well as to gain an understanding of the emerging innovative solutions currently in development to meet community health needs. This dual approach is intent on exploring current practices with a goal of enhancing the quality, efficiency, and effectiveness of services to marry system-oriented outcomes and community-oriented outcomes.

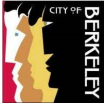
This research also includes information gleaned from the larger effort to Reimagine Public Safety, as well as a recently conducted feasibility study for a Specialized Care Unit (SCU), that included an alternative mental health and substance use crisis response model that does not involve law enforcement.

This *Needs Assessment and Recommendations Report* is a consolidated document that is structured to focus independently on the following assessment factors:

Our assessment of ECC operations includes, but is not limited to, the following:

- ECC operation policies
- Organization charts
- 9-1-1 and non-emergency telephony configuration and deployment
- Mutual aid agreements
- Facilities space and layout
- Scheduling software/practices
- Workflow/process maps for call-taking and dispatching
- Call processing and workload statistics
- Call volume statistics
- Training requirements and processes
- QA/QI requirements and processes
- Mapping/GIS, voice logging, CAD, RMS technology





- Performance metrics
- Current budgets and operations costs
- Operational and reporting requirements
- Service level agreements
- Human resources/contract information

The mixed methods approach provided the opportunity for the participating police and fire departments, as well as other agencies and stakeholders to confirm and validate the **FE** statements and descriptions that are the basis and foundation for all subsequent steps of the project.

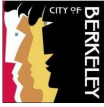
Specifically, stakeholder representatives included managers and frontline staff from:

- Berkeley ECC
- Berkeley Police Department
- Berkeley Fire Department
- City of Berkeley Human Resources
- Specialized Care Unit (SCU)
- Albany Fire Department and Communications Center
- Piedmont Fire Department and Communications Center

FE used interviews and meetings to provide participants with ample opportunity to present their views regarding the feasibility, options, requirements, and concerns around the ECC and the proposed pilot programs. Our subject matter experts (SMEs) systematically evaluated the feasibility of modifying the ECC's dispatch methodologies that included:

- Existing challenges and concerns regarding the integration of the Alameda County Regional Emergency Communications Center (ACRECC) in the provision of emergency medical dispatch (EMD) protocol pre-arrival instructions and changes that could be made to address these concerns
- The onboarding of Albany Fire Department and Piedmont Fire Department as new fire dispatch services clients
- Technologies, staffing, and requirements needed for the city to effectively adopt EMD protocols and onboard new fire dispatch clients





To prepare this report, **FE** followed a data collection process which included the submission of a Request for Information (RFI), a data collection survey tool (survey), and formal stakeholder interviews and focus group meetings. The information and data collected via the survey and the user and stakeholder input, was then analyzed by **FE**'s SMEs, who applied their collective experience and knowledge of industry best practices and standards toward the development of this Draft Assessment report.

FE's assessment, and the subsequent development of recommendations resulting from an exhaustive elucidation and review process, becomes the formulation of a long-range strategic plan that meets the vision and objectives of this effort.



2. Initial Findings

2.1 Communications Center Overview

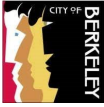
Throughout our site observations and interviews, our interactions with the Berkeley team were positive. We found both frontline and leadership alike to be committed to the process, aware that there are opportunities for service enhancement, thus this project, and were forthcoming and professional in their interviews about the current state, the desired future vision and project outcome, as well as the barriers and concerns that are typical in the migration toward structured call-taking and dispatch protocols.

It is apparent that from every corner of the organization, staff are dedicated to the mission of serving the community and are ready for needed change and improvements in the current environment.

2.2 Recurring Themes

Recurring themes reported throughout our data gathering, observation, and interview process include:

- Primarily, that despite any challenges the ECC and team are facing, they are exceptional professionals. They recognize the need for change and understand the necessity for implementing Emergency Medical Dispatch (EMD) and improving their operational practices, staffing levels, facility, and standard of care and practice. They welcome the opportunity in front of them.
- There is a perception that Supervisors and Dispatchers are not on the same page and there is inconsistent application of training, policy and procedure, coaching, evaluation, and discipline. Utilizing an aligned leadership approach that is consistent across all teams, and a system that has clear expectations and an objective, standardized Quality Assurance program is welcome and required to increase morale.
- Staffing challenges in the ECC which include:
 - Staffing shortages
 - Increase in call volume and population, as well as expanded Police and Fire response and service/program provision without the increase in ECC staffing to accommodate it.



- ECC staff belong to the Service Employees International Union (SEIU) Local 1021; a labor union that represents clerical, maintenance, and other City staff, and is not representative of public safety/first responder professionals or conditions.
- Workplace culture that is suffering. Staff are doing their best given the circumstances. However, a combination of short staffing, overtime, inconsistency in supervision, leadership, mentorship, a lack of training and professional development opportunities, combined with a heavy workload and trauma and stress exposure from the work performed leaves staff fatigued, and increases illness, absenteeism, workplace conflict, and if left unchecked will continue to perpetuate a difficult working environment and culture.
- Recruiting challenges including:
 - All hiring is completed by the Personnel and Training Team in collaboration with City of Berkeley Human Resources Division
 - Length of time and the process it takes to recruit and process qualified candidates (minimum 6-8 months from posting to first day of work)
 - Lower wages when compared to neighboring ECCs
 - There is a continuous lateral program for experienced Dispatchers; however, applications are limited due to lower wages and retirement tier differences in comparison to other PSAPs in the area
 - Lack of hiring incentives (as compared to neighboring PSAPs that offer them)
 - A gap in ability to remain competitive in the labor market, considering the challenges noted above
- Training
 - The ECC is tasked with managing, creating, and delivering their own training program.
 - There is no designated training position whose primary role is to oversee the training program. Instead, staff conduct the development, delivery, and maintenance of the training program while performing their other duties as Supervisors/Dispatcher.
 - Communications Training Officers (CTOs) that are POST certified receive a 10% wage increase when they are conducting training for Police Dispatch and a 5% increase when providing training for all other non-police positions. This is not a continuous pay increase and is only applied during actual training delivery hours.



- New recruits receive a combination of classroom and direct hands-on training at the workstation amid (high) active call volume. While exposure to high call volume for portions of the trainees at the workstation time is beneficial, in the current environment, high call volume is the norm due to the workload without staffing capacity to support it. This hinders a recruit's ability to learn effectively, or for the trainer to have capacity to effectively coach them.
- Because there is no scripted call-taking protocol software, there is inconsistency and variation in the training process and call processing performance expectations.
- Staffing shortages often prevent staff from attending training courses or conferences for continued dispatch education.
- Training is lengthy (9-12 months) and previous data indicates that only 45% of trainees are successful.
- Change Management and Inclusion in the Change Process:
 - Overall, there is intentional effort in effective communication and change management between the ECC, and Police and Fire Departments.
 - When procedures or policies change for Police or Fire Departments, ECC management is included in the early stages of the process.
 - When Fire or Police implement changes to their response, procedure, or programs, there is seldom a gap between when it is implemented and when there is a collective understanding of the change and ability (or capacity) for the ECC to fully support them.
- A concern that the ECC will not be able to resolve its current staffing situation and operating challenges in time to support upcoming EMD and Crisis Response programs and pilot projects.
- COVID impacts; the pressures, stress, short staffing and additional workload and procedural changes that it brought (and continues to bring). There was an initial hiring freeze during COVID, and the Recruitment and Retention Team was abolished.
- A facility/room that the ECC has outgrown – there is no room for expansion or re-organization within the current ECC facility.
- There is no backup center to relocate to, no evacuation or emergency management plan, no contingency or business continuity plan despite Berkeley being located on a major fault line. While there are no federal requirements for a backup center, NFPA 1225, Section 12.2.2 requires a comprehensive emergency

plan (CEMP), and Section 12.2.6 requires that an alternate communications center be provided.

- Openness to and interest in the possibility of implementing Emergency Medical Dispatch and Emergency Fire Dispatch protocol.

2.3 Crisis Response Model Challenges

The capacity for the ECC to take on new process to support alternative response programs is limited due to the current staffing crisis. However, there is opportunity for the current call triage process utilized for the Mobile Crisis Team to be improved and formalized without a significant impact on the ECC staff. There is no structured method or interrogation process to determine if a call is mental health in nature, instead, there is a reliance upon the caller to self-disclose. The introduction of the Specialized Care Unit (SCU) will affect the ECC on a much larger scale and will require a change management methodology in order to be successful. The ECC and other stakeholders need to initiate dialogue immediately so that there is staff buy-in, and to ensure the change management process is successful. The ECC must be included in the conversation and the decision-making process so that there is mutual understanding, training considerations, and input when creating policy, designing work practices, and training programs. Specific process with detailed steps and clear ECC direction is required when the new policy is implemented. Appropriate staffing levels must be in place prior to implementation.

Current Crisis Response Model challenges include, but are not limited to, the following:

- Mobile Crisis Team (MCT) is currently operational
 - The team is rarely dispatched first instance by the ECC; thus, this is not a true 'diversion' team because it generally does not eliminate the need for patrol response to police call for service.
 - There is no formal risk assessment to determine appropriate dispatch criteria.
 - The team works 5 days per week and only work until 10 PM.
- Specialized Care Unit (SCU) pilot program currently in development
 - Designing the Specialized Care Unit is part of the City of Berkeley's broader effort to reimagine public safety in Berkeley. This process has included significant stakeholder involvement, including from the Berkeley Fire Department, to design a team to meet the community need for behavioral health crisis response services.
 - The request for proposals for the SCU Provider was released on June 30 and closed on August 23, 2022. As the review process is complete and a provider

is selected, additional engagement opportunities will emerge for the SCU and ECC to determine exact calls for service and training.

- Recommended calls for SCU were determined by research from alternative models in other cities, community stakeholders and crisis responders. The ECC was not included in the process to recommend appropriate calls for service.
- Dispatch triage process has not been determined to clearly define and code appropriate calls for service or determine dispatch criteria.
- Currently, the SCU has no clearly structured integration plan in the continuum of care. Clear distinction between MCT and SCU calls for service must be determined to prevent redundancy and confusion for ECC and for the community.
- 9-1-1 and SCU phone line integration was recommended by Resource Development Associates (RDA), yet the ECC has not been included in process or technological plans.
- There is no defined method of data mining or evaluation of programs to ensure consistent delivery of services and continuous improvement of programs. Data collection and reporting will fall upon the selected Community Based Organization who may or may not have the technology or process required to continuously monitor and evaluate the Pilot Program.

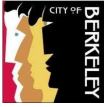
The remainder of this report will outline current conditions at the ECC and will expand further on some of the themes and gaps above as informed by our findings during data collection and site observations, and recommendations to address them.

2.4 Berkeley Communications Center (ECC)

The ECC is located within the Public Safety Building at 2100 Martin Luther King Jr Way and serves the entire geographical area of the City of Berkeley as well as supporting fire dispatch for the University of California (Berkeley) campus. The City of Berkeley has an estimated population of 121,485 (2019) and encompasses an area of about 18 square miles. The ECC's total annual call volume average is more than 200,000 emergency and non-emergency calls.

2.4.1 Governance

Management and oversight of the ECC is administered by the Berkeley Police Department (BPD). The ECC serves as the Primary Public Safety Answering Point



(PSAP) for the City of Berkeley. The ECC is responsible for answering and processing 9-1-1, ten-digit emergency and non-emergency calls for service and provides dispatch services for Berkeley Police Department (BPD) and Berkeley Fire Department (BFD). Further, the ECC also provides call answer, dispatch, and support for City Departments such as Animal Services and internal calls for service to the City's Public Works, Utilities Departments, and Parking Enforcement.

2.4.2 Facility

The ECC is located on the 2nd floor of the Public Safety Building, along with offices for the police and fire departments.

2.4.3 Power Systems

The building has an ONAN DFEC-3379147 450KW backup power generator, capable of handling all the power requirements of the building during an interruption of commercial power. The generator was installed in year 2000 and is a diesel-power system. The generator is tested weekly for 15 minutes, but it is not known if that is under full load. There is an uninterruptable power supply (UPS) system for the ECC that will keep all electronics up and running while the diesel generator is starting and coming up to full power.

Without doing an extensive power use study, the existing emergency generator appears to be sufficient for the ECC. An evaluation of the UPS loads should be undertaken to ensure that there is at least the NFPA required fifteen minutes load capacity on the system¹.

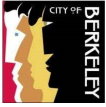
Only mission critical equipment (computers, other electronics on the dispatch floor and in the server room) should be on the UPS. Policies should be in place prohibiting the unauthorized use of UPS outlets at the workstations.

2.4.3.1 Physical Security

There are a minimum of two locked doors between the ECC and public access areas. The building itself is located adjacent to the street, but it was undetermined if any of the street-facing windows were impact resistant. The main entrance has been retrofitted with a roll-down steel door that can be closed if needed to protect that entrance.

¹ National Fire Protection Association 1225 Standard for Emergency Services Communications, 2022 Edition, Section 12.8.8.3





2.4.3.2 System Furniture

There are eight system furniture positions installed in the ECC. All eight positions have CAD, 9-1-1 answering equipment, and radio dispatch consoles. The furniture is provided by Watson, and all positions have CAD, radio and 9-1-1 equipment.

2.4.4 Emergency Medical Dispatch (EMD)

Berkeley ECC receives requests for Emergency Medical Services (EMS) calls via 9-1-1 and 10-digit emergency lines. EMS calls receive initial triage in the ECC, and EMS dispatch is provided by Berkeley ECC within the City of Berkeley. The PSD call-taker creates a call in CAD using the “medial” call type; they obtain basic information such as verifying address, phone number, obtain the reason for EMS request, along with age and sex, then enter the call into pending in CAD so the PSD assigned to fire dispatch can dispatch Berkeley EMS to the call. The call is then transferred to ACRECC, who are responsible for providing Emergency Medical Dispatch (EMD) call-taking protocol and post-dispatch and pre-arrival instructions.

2.4.5 Staffing

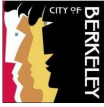
ECC staffing is provided by civilian staff who are trained in 9-1-1, Police, and Fire call-taking and dispatch. Typical shift staffing includes one Supervising Public Safety Dispatcher (Supervisor), two dispatch positions covering police or fire, one records dispatch position, and up to three call-taker positions depending on time of day. The staff work modified ten-hour shifts with five different start times (6 AM, 10:30 AM, 12 PM, 4 PM and 8:30 PM).

All staff are cross trained to perform both call-taker and dispatcher roles. This allows flexibility in the ECC; staff can rotate roles and provide back-up support and coverage for one another throughout their shifts as required.

Ancillary duties listed in the data collection workbook and noted via observation included:

- Answering administrative switchboard calls after hours and on weekends as well as during regular business hours when during periods of limited staffing
- Training
- Maintaining other supplemental information systems
- Minor troubleshooting for sworn personnel (Supervisor)
- Ongoing scheduling and overtime scheduling (Supervisor)





Detailed information on staffing can be found in Section 4. *Staffing*, and Section 6. *Staffing & Workload Analysis*.

2.5 Berkeley Police Department

The Berkeley Police Department provides law enforcement protection for the City of Berkeley and is responsible for the operation of the ECC.

In addition to responding to all law enforcement incidents in the city, the Police Department regularly co-responds on numerous Fire and EMS incidents. For EMS calls, Berkeley ECC receives the original 9-1-1 call and dispatches EMS, but transfers EMS calls to ACRECC for EMD provision. Berkeley ECC also dispatches BPD for EMS calls when required. Further information on this process will be included in Section 6.1, *Call Flow Description*.

Similarly, ECC staff process all 9-1-1 calls for Fire, and are responsible for the subsequent notification and dispatch of Fire Department resources. When Fire requires police response to one of their calls, they advise the ECC by radio, and the dispatcher creates a call for service in CAD for BPD.

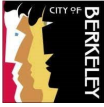
2.6 Berkeley Fire Department

The Berkeley Fire Department (BFD) is an integrated fire and emergency medical services (EMS) ALS department that provides 24-hour response to emergencies including fire suppression, medical emergencies, hazardous materials events, water rescue, disaster response and other life-threatening emergencies to the City of Berkeley citizens and visitors. BFD operates out of seven separate locations within the city, housing seven engine companies, five truck companies, and four ambulances.

Berkeley Fire Department responds to a wide variety of fire, rescue, and medical calls.

For Fire calls in Berkeley, the ECC receives the original 9-1-1 call. The call-taker will obtain information such as address, the nature of the incident, and other pertinent details to categorize the call type and priority, which includes fires – structure, vehicle, or other, medical assist, or police assist. The dispatcher then accepts the call into CAD, dropping the call into the pending screen where the dispatcher can review and dispatch the appropriate BFD units to respond. Call location, information, and a run number is provided via mobile data terminals (MDTs) housed in the fire response vehicles.





For EMS calls in Berkeley, the ECC receives the original 9-1-1 call. When EMS is requested, ECC staff will first verify and record in the CAD event (call form) the address of the emergency, the nature of the medical incident, and the patient's age and sex, and will then transfer the voice call to ACRECC via a "hot button" transfer on the call handling system. ECC call-takers will enter the incident type as a medical call and will accept the call, dropping it into the CAD pending screen, where the fire dispatcher can review and send the appropriate BFD Ambulance to respond. Once the call is transferred to ACRECC, it is processed using the Medical Priority Dispatch System™ structured Emergency Medical Dispatch (EMD) protocols. Additional detailed information on this process is provided in the *Call Flow Description* section below.

All BFD personnel are cross trained as Firefighters and Advanced Life Support (ALS) Paramedics and as part of the Department's service provision, respond to all medical calls for service to provide patient care and transport the patient to the hospital.

Although there are frequent calls for response to EMS incidents, there is no electronic means or CAD to CAD interface to share call information or real time updates between the ECC and ACRECC, or from ACRECC to the BFD MDTs. Any further updates are provided by each ECC calling one another over the telephone and manually entering the information into CAD. This process is cumbersome and further complicated by difficulties reaching ACRECC during periods of peak call volume.

Berkeley Fire and Police respond together regularly. When Police require Fire response, the request is made through the ECC, with alerts going to the acting on-duty fire chief via radio, as well as electronically through the MDTs. There is a CAD to MDT interface that allows the sharing of information, as well as a radio talk group (channel) that Police and Fire communications share.



3. Organizational Analysis

3.1 Observations

The Berkeley ECC, like many other similar communications operations, finds itself at the crossroads of change. The ECC has outgrown its current organizational model, and a re-examination of its oversight is in order.

While most public safety agencies have embraced the changing needs of the community, including the adoption of best practices, public safety communications facilities in general have not been included. The vision and direction of the ECC have changed, and the desire to implement EMD as well as a sophisticated call diversion program have jump-started a migration to a new model.

If the migration to a change in operations is to be achieved, there are certain key elements that will need to be addressed that will enable an improved standard of care and practice for the citizens of Berkeley. This will include providing specialized care to calls pertaining to mental health, behavioral health, substance abuse, and/or homelessness and will bring new and innovative levels of response to those requiring special care.

Public safety communications organizations are facing unprecedented personnel shortages and are desperately trying to hire and retain new employees. Wages and incentives to attract and retain qualified and experienced candidates may be needed to attract workers. In addition, new employee training programs have been moderately successful due to an outdated classroom approach as well as the lack of dedicated training staff. This is compounded by the fact that without protocol-based call-taking, or a training program led by dedicated training staff, it is difficult to train new employees with the consistency or the necessary support required to be fluent and confident in call-taking early in the process. The result is the washout and turnover of new employees, with some recruits not finishing their training and leaving either before, or shortly after being assigned to a regular shift.

It must be acknowledged that the ECC personnel are doing the best they can with the capacity and resources they have. However, with frequent staffing shortages, the lack of staff, support, and adequate time off combined with overtime takes its toll and impacts every level of the ECC operation. In short, turnover is occurring and will continue until the oversight and staffing issues are addressed.

Since its inception, the ECC has lived within the Berkeley Police Department organization. While the City of Berkeley has grown in population, so too have call volumes. The

traditional service delivery models that include police, fire, and emergency medical services are being challenged by our citizens. This includes the adoption of a brand-new service delivery model, driven by public opinion, which includes the diversion of certain call types from a police response to a mental health care approach. In the case of the ECC, staffing levels, and the operational and organizational model has not grown to support these changes in the response models which will impact workload, call volume, and staffing within the ECC.

As previously stated, the governance and leadership model are no longer serving the dynamic and demanding needs of a 21st century Emergency Communications Center. The process to hire a new Communications Center Manager is underway, and it is expected that this position will be staffed in Q3 or Q4 of 2022. It is anticipated that this will signify the first significant step to the migration of an enhanced service model.

The ECC, located in the police headquarters building, is managed, and funded by the PD in every respect. There is a commonly held perception that the ECC favors the police operation over fire and emergency medical services. While the respective chiefs work collaboratively to ensure both agencies' needs are met, the reality is that the ECC has not grown in size to meet the expected level of service delivery. It is timely that thoughtful consideration be given to transition the ECC to become an independent city department.

3.1.1 Governance

Governance refers to establishing a shared vision and a collaborative decision-making process supporting interoperability efforts to improve communication, coordination, and cooperation across jurisdictions.

Developing an appropriate governance structure for an independent ECC that supports multiple departments is a critical component to enabling leaders to effectively manage center resources and provide the best possible service to all user agencies and the community. The development of a governance structure is often be impacted by political and user agency control issues. It is therefore important to realize when collaborating on the shared services model, and combining services into an independent emergency communications facility, that the decision makers and leaders need to utilize ECC resources to best balance the needs of all user agencies as opposed to a single agency. While this balance can be easily achieved, the governance structure can positively or negatively impact the ability of ECC management to maintain the balance long term.

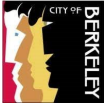
Governance considerations will need to include a review process, lessons learned, scheduled system health checks, clear resource needs for support staff number, roles, training, and funding. Other considerations to include in governance planning is defining

the structure of the system, how it will be maintained and by whom, and how to gain support from secondary agencies. The shared goal among the City, Police, and Fire must be that the ECC becomes an entity that is independent, but cooperatively supported by all parties.

3.1.2 Recommendations

To achieve the operational model the City of Berkeley needs and desires, we recommend:

- The City of Berkeley begin implementing the High-Level Implementation Plan as described in *Section 4* of this report.
- Leadership in the ECC must be educated and experienced in Public Safety Communications specifically.
- The ECC has outgrown its current model of organizational structure and leadership. Consider transitioning the ECC to a separate business unit in the City - not under the leadership of Police or Fire but reporting to a board of stakeholders that include Police and Fire.
- Addressing and improving workplace culture. The ECC has lacked Public Safety Communications-specific leadership and continuity in leadership. As a result, there has been insufficient training and mentorship in how to lead effectively in an ECC. Staff work in perpetual overtime and short staffing conditions (limited time off and a minimum overtime requirement of 5-20 hours per week). The call volumes and workloads are at times nearly double what it should be for each team member on duty during a shift (based on staffing calculations). All of this combines to make a challenging work environment while on duty, and not enough rest between shifts while off duty. It creates additional stress, illness, absenteeism, workplace conflict, and has all the ingredients necessary to create and perpetuate a toxic workplace culture, which will further add to the cycle. **FE** recommends that the necessary steps to address staffing issues and other critical gaps in the ECC be implemented immediately, and that leadership work with ECC staff to support and promote measures for workplace culture improvement. Positive workplace culture is a shared responsibility; it is not the sole responsibility of leadership, nor the sole responsibility of frontline staff to improve culture and working environment, but rather a collaboration of working together intentionally and strategically to identify and remove barriers to create and promote effective organizational health.



4. Staffing

4.1 Current Staffing

Current ECC staffing includes one Communications Center Manager who oversees ECC operations (currently filled by a Berkeley Police Lt.), and frontline supervision which includes four Supervising Public Safety Dispatchers (Supervisors). Additional frontline staff include twenty-three Public Safety Dispatchers (PSDs) who are cross trained in Call-taker and Dispatcher duties; seven of the Public Safety Dispatchers are approved to act in the Supervisor role. Additionally, there are two per-diem Dispatchers. These ‘casual’ staff are limited to the number of hours they can work annually, due to the Collective Bargaining Agreement.

The following table depicts all the employees assigned to the ECC:

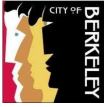
Table 1 - ECC Employees

Current Staffing - Berkeley		
Position	Authorized Employees – Full Time	Actual Employees – Full Time
Communications Center Manager	1	0
Supervising Public Safety Dispatchers	4	4
Public Safety Dispatchers	28	23
Total	33	27

At the time of our site visit, the Communications Manager position was unfilled, and a Berkeley Police Lieutenant has been assigned to the position since 2019. The Manager position will be posted in 2022 with the intent to fill the role this year. The Lieutenant will return to Police operations once the new manager has been onboarded and oriented to the position.

Optimal staffing in the ECC includes one Supervising Public Safety Dispatcher (Supervisor) or Acting Supervisor who oversees the daily operation and provides supervision, three dispatchers – one Police and one Fire Dispatcher, and one records desk operator (RB1), and between three to five call-takers depending on time of day, who also provide Dispatch support on Police Channel 2 in addition to their call-taking duties. Staff are hired as a Public Safety Dispatcher and are cross trained to provide call-taking





and dispatch in Police and Fire disciplines in the ECC. The ECC does not hire call-taker only positions.

Minimum staffing between 0000 and 1030 is six staff which include one supervisor, three dispatchers - one fire dispatcher, one police dispatcher, and one Records Desk (RB1) Dispatcher and two call-takers. There are seven staff on duty between 1030-2200 on Sunday to Wednesday, and 1030-2359 Thursday to Saturday, consisting of one supervisor, three call-takers and three dispatchers.

While minimum staffing requires a supervisor on duty at all times, in instances where there is no Supervisor on shift, staff would defer to a Patrol Sergeant or Lieutenant for direction. Due to five different staggered shift start times, staff do not work with the same Supervisor or team regularly.

The following table shows the minimum ECC staffing levels:

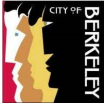
Table 2 - Minimum Staffing

Minimum Staffing - Berkeley					
Day	Hours	Supervisors	Call-Takers	Dispatchers	Total
All	00:00 to 10:30	1	2	3	6
Sun-Wed	10:30 to 22:00	1	3	3	7
Thu-Sat	10:30 to 23:59	1	3	3	7

- Call-takers are not solely dedicated to call-taking; they support monitoring Police Channel 2 dispatch responsibilities.
- Dispatchers are not dedicated to dispatch only; they are often required to answer, and process calls due to short staffing.
- Supervisors are not dedicated to Supervisor only roles. They provide call-taking and dispatch responsibilities as required to support call volume and short staffing impacts, in addition to their supervisor duties.

Every year in January, staff bid on the shift schedule they prefer, and new shift schedule reassignments commence in March. Time sheets change every four months, and selection is based on seniority. Staff work four days a week and have three days off. If necessary, staff are required to work up to 25 hours overtime per week on their scheduled workdays (extension of shift), with the ability to swap shifts to suit their personal schedule. Staff submit their preferred over-time shifts and Supervisors manually schedule staff as needed. If additional over-time is required Supervisors first approach working staff to extend their shift (up to sixteen hours) and then send emails or texts requesting assistance from off-duty staff.





There are currently five vacant Public Safety Dispatcher positions in the ECC. In 2018, a City of Berkeley Auditor Report recommended an annual staffing analysis of required minimum staffing levels and budgeted Dispatchers to meet demand and reduce the estimated \$1 million dollars paid in over-time in 2017 and subsequent years.

In addition to the vacancies and staffing study issues noted above, staff turnover in 2022 will compound staffing challenges and further impact staffing capacity.

4.2 Salary Ranges

The following tables depict the current salary ranges for the ECC employees.

Table 3 - ECC Current Salary Ranges

Current Salary Ranges – Berkeley ECC			
Position	Low - Annual	High - Annual	Average
Communications Center Manager	\$114,399.96	\$139,464.00	\$126,931.98
Supervising Public Safety Dispatchers	\$109,699.20	\$119,038.32	\$114,368.76
Public Safety Dispatchers	\$95,638.32	\$103,791.96	\$99,715.14

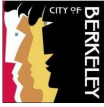
4.3 Supervision

The ECC is overseen by the Support Services Division Captain who is responsible for the Records Bureau, Property and Evidence Unit, Warrant Detail, Administration (Fiscal and Grants), Police Technology Unit, and Court Liaison.

The Communications Manager is a civilian position who reports to the Support Services Division Captain and conducts the overall strategic and operational oversight and management of the ECC. This position was traditionally filled by a Police Lieutenant until 2012, when the decision was made to create a Civilian Manager position for the ECC. However, a Berkeley Police Lieutenant has been assigned to this role (temporarily) since 2019, after the previous Manager retired, and the hiring freeze that occurred due to Covid. At the time of this report writing, Berkeley is in the process of hiring an ECC manager. Interviews will occur in July 2022, with a new Communications Manager to be hired in September 2022.

A Supervisor is required to be on duty for each shift. If a Supervisor is on leave, their shift is covered by an Acting Supervisor on their team. If an Acting Supervisor is not available on their team to cover, a Supervisor will be brought in on overtime to cover the position.





The intent is to have direct supervision scheduled in the ECC 24/7, where Supervisors are not assigned as team strength to perform frontline work and have the capacity to maintain situational awareness in the center and provide supervision and support to staff. However, due to frequent staffing shortages in the ECC, that is not possible. Supervisors are tasked with call-taking and dispatch throughout their shift in order to keep up with workload in the center. In turn, this increases the Supervisor's workload and leaves the ECC without direct supervision.

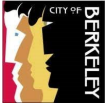
The Supervisor is assigned the supervisory specific workstation, located in the northwest corner of the room on an elevated terminal, providing them the ability to observe all workstations, and have increased situational awareness. Supervisors have full access to CAD, a radio console, the Eventide logging recorder, and fully functioning call handling system capable of answering 9-1-1, emergency, and non-emergency lines.

Throughout their shift, Supervisors are responsible for staff supervision and support, monitoring call volume and calls in pending, scheduling breaks each shift and ensuring current shift and upcoming shifts are adequately staffed, as well as arranging for part time staff or overtime support to fill in, as necessary. They are active supervisors, listening for requests for assistance from the team on duty. There is no call light, intercom, or other means of easily requesting supervisor support; team members call out to the supervisor when required.

There are many administrative tasks Supervisors perform on shift as part of their duties including, but not limited to the following:

- Maintain the personnel scheduling
- Oversee staffing, overtime, and payroll paperwork (manual paper process)
- Review, deliver and develop training materials
- Coordinate training for existing and new ECC staff
- Perform QA/QI reviews
- Act as an Agency Terminal Coordinator (ATC) for the ECC (NCIC/CLETS)
- Perform Fire Liaison Supervisor tasks
- Complete requests for audio and call recordings
- Assist with recruitment
- Work with CAD & GIS team to provide administrator functions and support





Staff are promoted to Supervisor positions based on qualifications. This promotional process and criteria were recently created and implemented by the ECC Lieutenant, in conjunction with the City of Berkeley. The entry point for becoming a Supervisor is to first become an Acting Supervisor. There are Acting Supervisors on each shift, who cover in the Supervisor's absence. They receive a 5% pay increase for the hours worked in an acting capacity.

Supervisors are mandated to complete Civilian Supervisor and Dispatch Supervisor training through the California Peace Officer Standards and Training (POST) organization. However, these courses are not a comprehensive Supervisor or leadership program, and Supervisors still require additional training specific to the ECC. Training for those staff in an Acting Supervisory role is often not possible due to current staffing levels within the ECC.

4.4 Recruiting Process

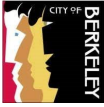
The recruiting process for Public Safety Dispatchers is administered by the City of Berkeley Human Resources Division and Berkeley Police Department (PD) Personnel and Training Bureau. Recruiting is a lengthy process, taking between six and eight months from the time a position is posted until the candidate is onboarded for their first day of work.

Requirements to fulfill a Public Safety Dispatcher position include a high school diploma or equivalent, minimum accurate typing of 35 wpm, a written POST comprehension test, a Criticalt test, a panel interview, a Computer Voice Stress Analysis (CVSA) evaluation, a background evaluation, and a medical exam. Experienced Dispatchers can be hired at any time with the qualifications of two years Public Safety Dispatch experience or three years non-consolidated Public Safety experience and a POST Dispatch Certificate.

The testing is conducted by a combination of City of Berkeley HR, Berkeley PD Personnel and Training Bureau and various outsourced contracted staff for medical and psychological assessments.

Recruiting advertising includes posting internally and externally for the respective position(s), candidates are vetted by HR for minimum qualifications and relevant training, education, and experience. Candidates are then brought in to complete the written POST test and receive instructions on how to download the personal history form. Applicants that successfully pass the exam are invited to the oral panel interview. The panel generally includes the Communications Manager or Lieutenant, a minimum of two





Dispatch Supervisors, and the Personnel and Training Bureau Sergeant. The interview is 30 minutes and includes scenario based and work experience questions.

Selected candidates are then invited to a pre-investigative interview with a Professional Standards Sergeant or Lieutenant. The applicant completes required waivers and questionnaires and engages in an informal conversation with the Officer, following which the CVSA is completed. A Sergeant, a Lieutenant and two Captains provide input and if successful a conditional employment offer is presented. Medical and psychiatric tests are required before the hiring process is completed. The background check process is the longest point of delay as it was understood that Sworn Officer hiring is given priority over Dispatchers. Additionally, Officers conducting the checks have other responsibilities as well and the contracted company are only able to complete four assessments at a time resulting in a six-week delay at times. Hiring is further complicated by the decimation of HR staff during COVID. HR believes that there would be a conflict of interest for the ECC to post or proctor tests and therefore is solely responsible for these steps in the recruiting process.

4.5 Ancillary Duties

Ancillary duties the communications staff provided in the data collection workbook and noted via on-site observation included:

- Notification of Public Works
- Training
- Call-taking and notification of Animal Control
- Dispatch for University of California, Berkeley (UCB) Fire
- Initial Center response for UCB medical
- After hours parking complaint call-taking and notification
- Maintain other supplemental information systems.
- Minor troubleshooting for sworn personnel (Supervisor)
- Scheduling for overtime (Supervisor).
- Maintain the personnel scheduling (Supervisor)
- Oversee staffing, overtime, and timesheet paperwork (manual paper process) (Supervisor)
- Review, deliver and develop training materials (Supervisor)



- Coordinate training for existing and new ECC staff (Supervisor)
- Perform QA/QI reviews (Supervisor)
- Act as an Agency Terminal Coordinator (ATC) for the ECC (NCIC/CLETS) (Supervisor)
- Perform Fire Liaison Supervisor tasks (Supervisor)
- Complete requests for audio and call recordings (Supervisor)
- Assist with recruitment
- Work with CAD & GIS team to provide administrator functions and support (Supervisor)

4.6 Recommendations

4.6.1 Succession Planning

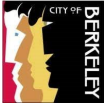
- Annual performance reviews and goal setting
- Leadership Training opportunities for potential A/Supervisors
- Employee evaluation and succession planning program/efforts

4.6.2 Recruiting

- Fast track onboarding for entry level and experienced candidates
- Review recruiting process, job requirements, and incentive programs
- Establish competitiveness in the job market
- See other recommendations in the recruiting recommendations section of the report

4.6.3 Employee Wellness Program

- Implement an employee wellness program
- Training, education and support for mental health and wellbeing
- ECC specific peer support
- Understand the impacts of the trauma/stress exposure, shift work, etc., and have the tools to navigate it



5. Workload and Performance Data Indicators

The information in this section includes statistical information for phone calls and CAD events processed by the Berkeley Emergency Communications Center.

5.1.1 Summary Performance Data

- Average number of abandoned calls received per day: 29
- They average time to answer 9-1-1 calls is 10.9 seconds
- The average talk time for 9-1-1 calls is 105.3 seconds
- The average call wrap-up is between 45 seconds
- The busiest day of the week is Tuesday/Wednesday/Friday
- Busiest time of day is between 1500 and 1600 hours
- The busy month is October

5.1.2 Telephone Statistics

The following tables depict the telephone call volume for 2021 as reported by Berkeley.

Table 4 - Percentage of Total Calls – 2021

Percentage of Total Calls - 2021	
% of all Calls	2021
Total Calls	201,434
% of All Calls that were 9-1-1	28.0%
% of All Calls that were Ten-Digit	48.7%
% of All Calls that were Text to 9-1-1	0.1%
% of All Calls that were Outgoing	23.2%

Table 5 - Percent of Total 9-1-1 Calls – 2021

Percent of Total 9-1-1 Calls - 2021	
% of Total 9-1-1 Calls	2021
Total 9-1-1 Calls (Wireline, wireless, text)	56,582
% of 9-1-1 calls that were Text-to-9-1-1	0.10%

The following table depicts the telephone call volume as reported for the years 2017 through 2021.



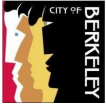


Table 6 - Berkeley ECC Phone Statistics 2017 – 2021

Berkeley ECC – Phone Statistics						
Berkeley ECC	2017	2018	2019	2020	2021	Average
Total Wireline 9-1-1 Calls	13,275	13,720	13,770	12,354	12,666	13,158
Total Wireless 9-1-1 Calls	42,175	45,032	47,811	40,955	43,716	43,938
Total 10-digit Emergency and Non-Emergency Calls	172,761	193,743	174,931	101,725	98,041	148,240
Text-to-9-1-1 Calls	0	0	0	141	200	68
Outgoing Calls	42,312	50,671	52,023	45,666	46,811	47,677

The following graphs depict the telephone call volume as reported for the years 2017 through 2021.

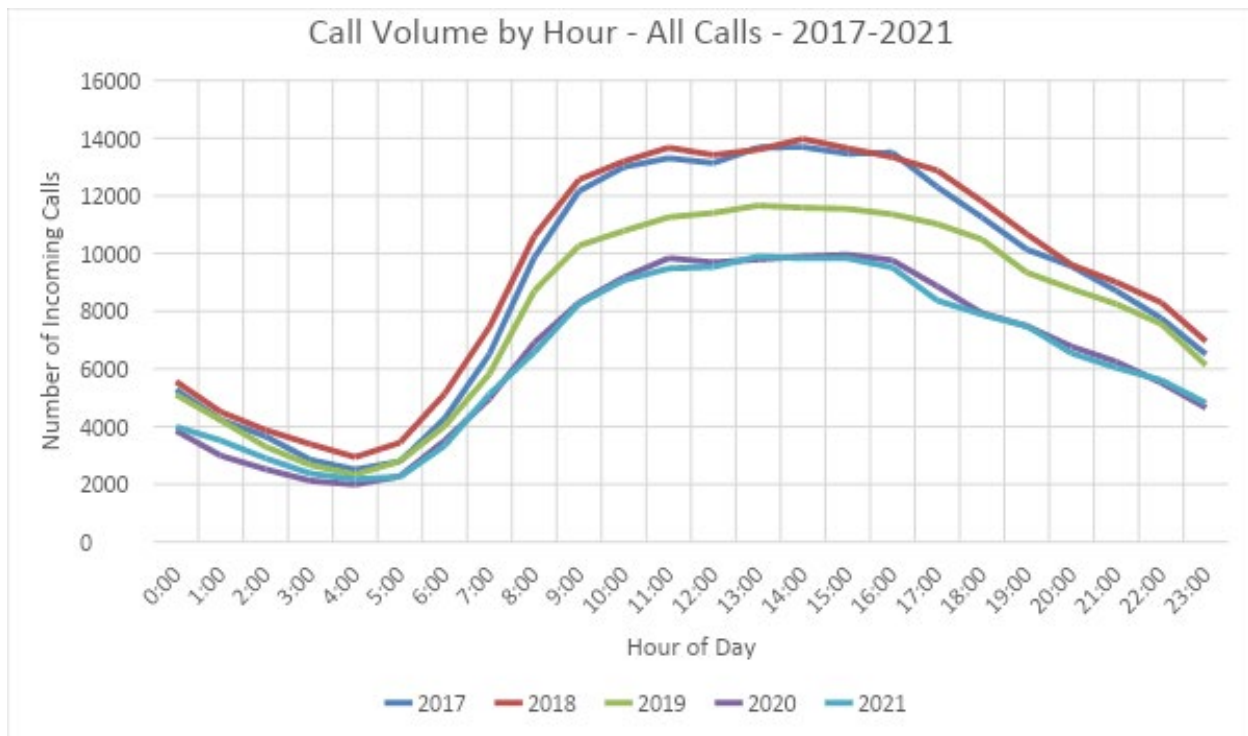


Figure 1 - Call Volume by Hour - All Calls 2017 – 2021



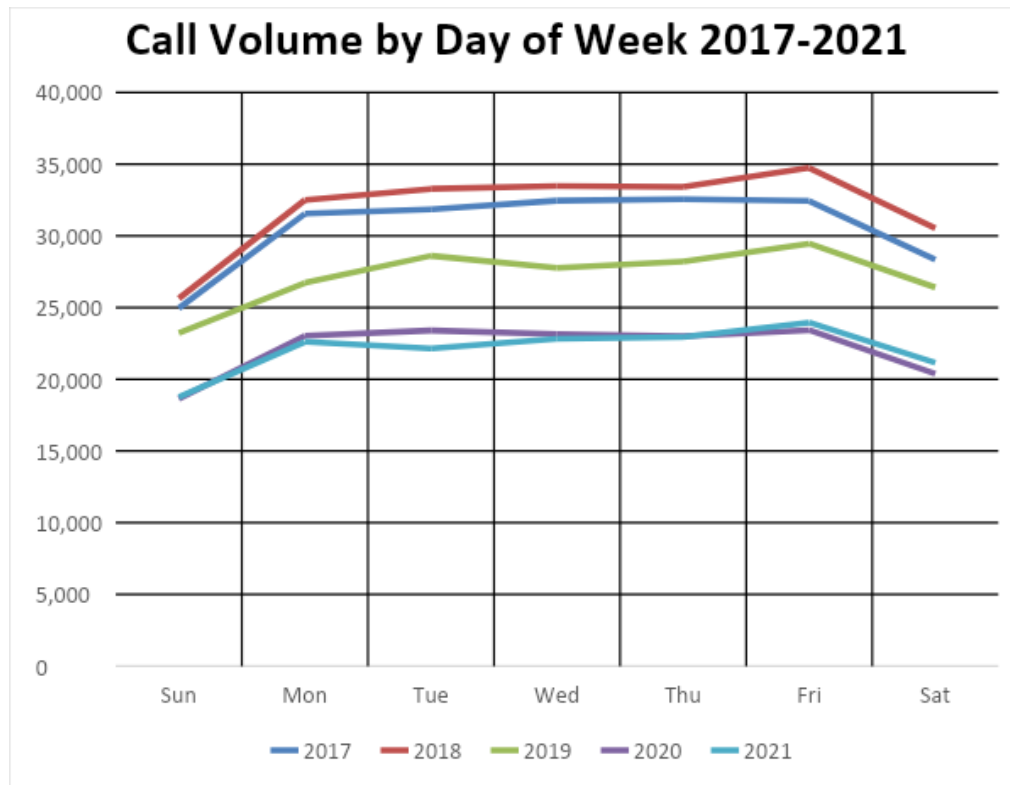


Figure 2 - Call Volume by Day of Week 2017 – 2021

Both the NFPA and NENA standard for answering incoming emergency lines is within 15 seconds 90 percent of the time²³. While the ECC complies with these standards in the overnight hours, they fall below the standards during daylight hours. This can be attributed to the higher call volume during the day but shows that staffing needs to be augmented during these hours.

² National Fire Protection Association 1225 Standard for Emergency Services Communications, 2022 edition, Section 15.4.1

³ National Emergency Number Association Standard for 9-1-1 Call Processing, NENA-STA-0.20.1-2020

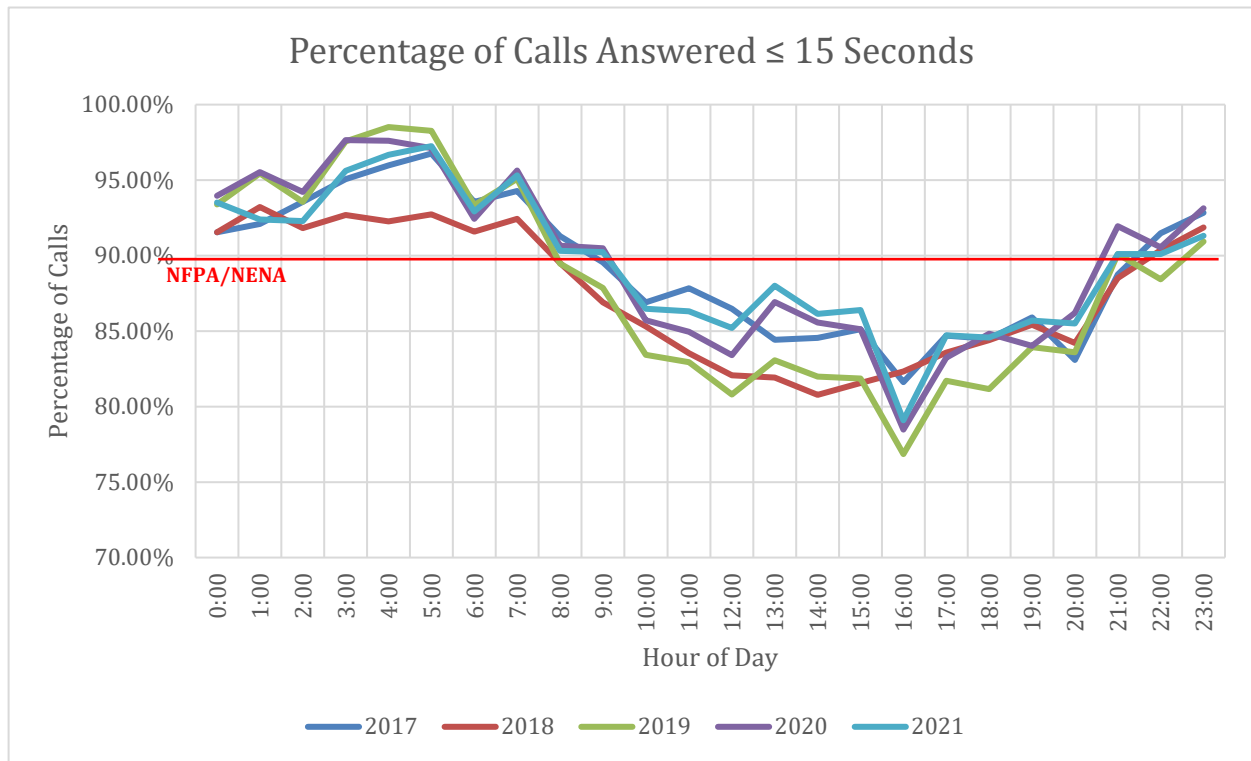


Figure 3 - Percentage of Calls Answered < 15 Seconds

5.1.3 CAD Statistics

The following tables depict the total number of CAD Events as reported for the years 2017 through 2021.

Table 7 - CAD Events 2017 – 2021

Berkeley – CAD Events 2017 - 2021						
Agency Type	2017	2018	2019	2020	2021	Average
# of Law Enforcement Incidents	63,222	56,677	58,422	45,863	62,899	57,417
# of Fire Incidents	5,538	5,357	5,821	5,348	5,310	5,475
# of EMS Incidents	10,406	9,972	9,899	8,064	8,760	9,420
Total	79,166	74,006	74,142	59,275	76,969	72,312

There is an expected drop in call volume in 2020 due to the COVID-19 pandemic, and 2021 shows a slow return to anticipated call volumes in the future.

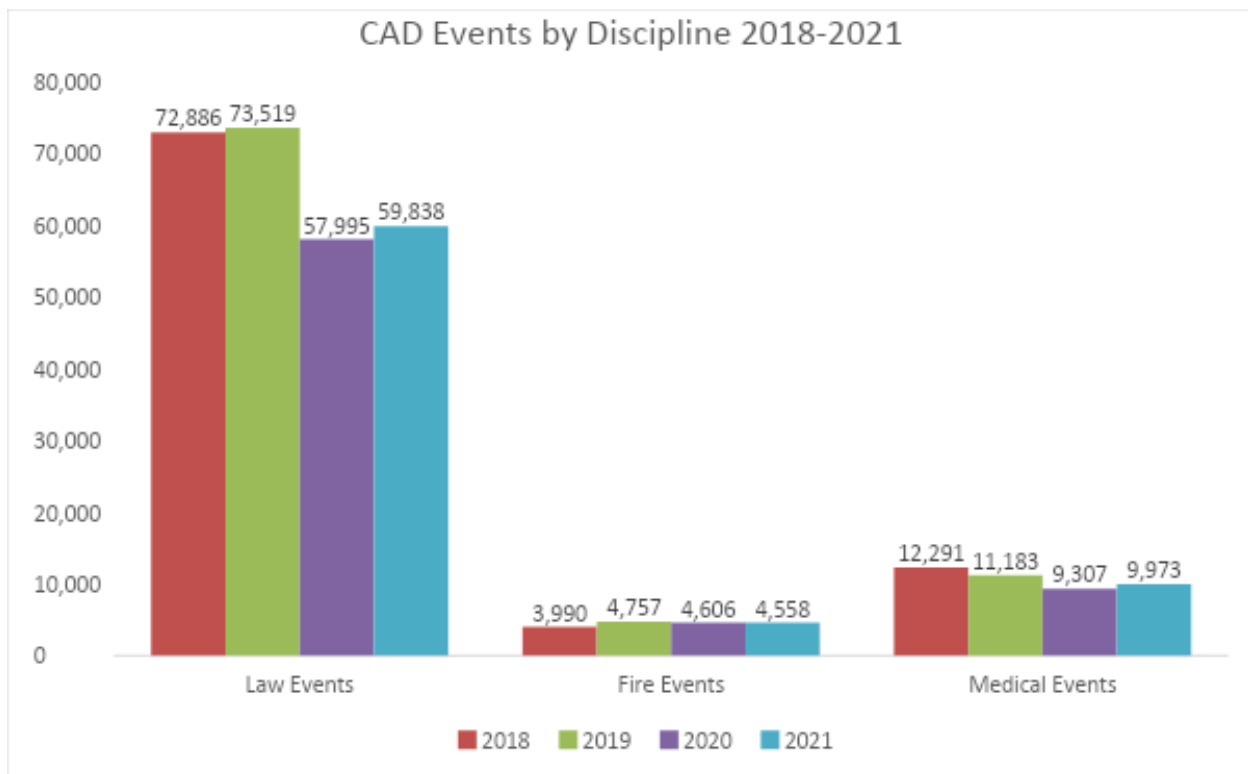


Figure 4 - CAD Events by Discipline 2018 – 2021

Call volumes between the three disciplines (law, fire and medical) reflect the 2020 decreases except for the fire department, which remained steady in 2020.

Table 8 - Percentage of CAD Events - 2018 – 2021

Berkeley – Percentage of CAD Events 2018 - 2021				
% of CAD Events	2018	2019	2020	2021
Total Events	89,167	89,459	71,908	74,369
% of Events that were Law	81.74%	82.18%	80.65%	80.46%
% of Events that were Fire	4.47%	5.32%	6.41%	6.13%
% of Events that were EMS	13.78%	12.5%	12.94%	13.41%

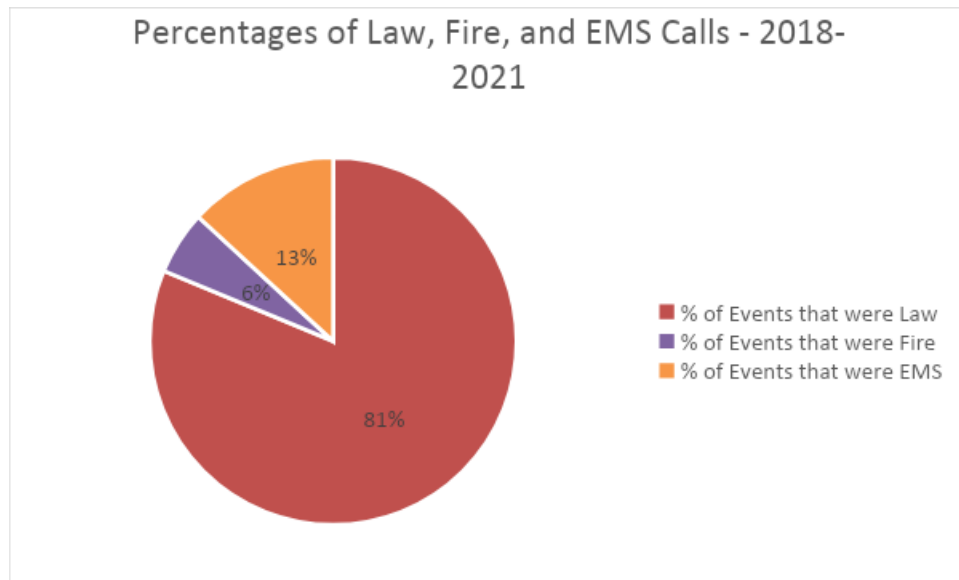


Figure 5 - Percentages of Law, Fire, and EMS Calls - 2018 – 2021

Percentages between the disciplines also remain fairly consistent, with minor increases in the fire department percentages from 2018 to 2021.

6. Staffing & Workload Analysis

To provide efficient service to the public and local emergency services, ECCs must always maintain an adequate number of qualified staff on duty. When this does not occur, service quality can diminish and the short and long-term effects on employees often lead to staffing shortages, overworked personnel, increased attrition, increased complaints from citizens and response agencies, and a reduced level of confidence in the ECC's operations.

The staffing needs of a 24/7 public safety communication center operation require constant monitoring of the workload and staffing assignments to maximize coverage across all shifts. The work hours and assigned positions per shift are based on need, skill sets, experience, and call volume. ECC management and supervisory staff are responsible for monitoring these.

The NFPA 1225 (2022), Annex A.15.3.1.1 states *“Telecommunicator staffing is an important issue in achieving prompt receipt and processing of events. Consider the following two concepts of communications center operations:*

1. **Vertical Center:** A telecommunicator performs both the call-taking and dispatching functions.
2. **Horizontal Center:** Different telecommunicators perform the call-taking and dispatch functions separately

Telecommunicators working in a vertical center are known to engage in multitasking that can inhibit their ability to perform assigned job functions. Routine evaluation of telecommunicator staffing, number of inbound emergency and non-emergency calls, and other operational statistics are necessary to allow a prompt receipt and processing of events.”

Across the industry, there are many ECCs who utilize a Horizontal Center call model to avoid the risks that the vertical model poses. However, in horizontal model centers, often staff assigned to Dispatch and Supervisor positions are still found assisting with answering and processing calls due to short staffing. This is the circumstance in Berkeley ECC.

6.1 Standards and Best Practices

Key public safety industry organizations recognize that the on-going evolution of 9-1-1 requires establishing minimum standards for ECC employee training, operations, technology, and facilities.

These organizations include:

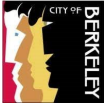
- International City/County Management Association (ICMA)
- National Emergency Number Association (NENA)
- Association of Public-Safety Communications Officials - International (APCO)
- International Association of Fire Chiefs (IAFC)
- Commission on Accreditation for Law Enforcement Agencies (CALEA)
- National Fire Protection Association (NFPA)

The specific standards applicable to City of Berkeley include the following service quality and performance goals in call-taking:

NENA-STA-020.1-2020, 9-1-1 Call Answering Standard, states, "90% of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP):

- SHALL be answered within 15 seconds. Ninety-five percent of all 9-1-1 calls SHOULD be answered within 20 seconds."
- The interval between Call Arrival and Call Answer should be evaluated, at a minimum, for each preceding month using a full month of data. Determining if a PSAP has successfully met the call interval metric of 90% in 15 seconds (and 95% in 20 seconds), should be based upon the one-month evaluation. An authority having jurisdiction (AHJ) may measure this metric on a weekly or daily basis for a more detailed analysis.
- "Ninety percent of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) shall be answered within ten seconds during the busy hour (the hour each day with the greatest call volume, as defined in the NENA Master Glossary 00-001). Ninety-five percent of all 9-1-1 calls should be answered within 20 seconds."

The call processing requirements section in NFPA 1225 (2022) states:



- Section 15.4.1 - "Ninety percent of events received on emergency lines shall be answered within 15 seconds, and 95 percent of events shall be answered within 20 seconds.
- Section 15.4.1.1 - "Compliance with 15.4.1 shall be evaluated monthly using data from the previous month."
- Section 15.4.4 - "Emergency event processing for the highest prioritization level emergency events listed in 15.4.4.1 through 15.4.4.2 shall be completed within 60 seconds, 90 percent of the time."

6.2 Staffing Recommendations

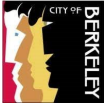
As the staffing analysis and recommendations in this report are comprehensive, **FE** has included a staffing recommendations overview in the beginning of this section to provide a high-level understanding immediately. The methodology, analysis, and recommendations will be explained in further detail throughout the Call-Taking, Dispatching, Supervision, and Methodology for Staffing Recommendation sections below.

The table below identifies the required number of call-takers, dispatchers, and supervisors by hour of day, based on call volume from the busiest month in 2021.

Table 9 - Berkeley ECC – Staffing Recommendations

Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
0:00	2.36%	15.7	3	4	1	8
1:00	2.28%	15.2	3	4	1	8
2:00	2.26%	15.0	3	4	1	8
3:00	1.67%	11.2	2	4	1	7
4:00	1.61%	10.7	2	4	1	7
5:00	1.71%	11.4	2	4	1	7
6:00	2.07%	13.8	2	4	1	7
7:00	3.34%	22.2	3	4	1	8
8:00	4.44%	29.6	4	4	2	10
9:00	5.37%	35.8	4	4	2	10
10:00	5.53%	36.9	4	4	2	10
11:00	6.33%	42.2	4	4	2	10





Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
12:00	6.12%	40.8	4	4	2	10
13:00	5.89%	39.3	4	4	2	10
14:00	6.38%	42.5	4	4	2	10
15:00	6.89%	45.9	5	4	2	11
16:00	6.51%	43.4	5	4	2	11
17:00	5.28%	35.2	4	4	2	10
18:00	4.96%	33.1	4	4	2	10
19:00	4.79%	31.9	4	4	2	10
20:00	4.19%	27.9	4	4	2	10
21:00	3.44%	22.9	3	4	1	8
22:00	3.16%	21.0	3	4	1	8
23:00	3.41%	22.7	3	4	1	8
TOTAL	100.00%	666.4	3.46	4.00	1.54	9.00

The tables below identify the recommended number of staff by position and job function. The first table will have recommendations without turnover factored in, and the second has turnover factored into the total recommended number of staff.

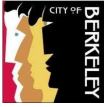
Table 10 - Recommended Staffing without Turnover Factored In

Recommended Staffing without Turnover - Berkeley ECC	
Position Title	Total Number of Employees
Shift Supervisors	9
Dispatchers	24
Call-Takers	21
Total PSAP Staff	54

Table 11 - Recommended Staffing with Turnover Factored In

Recommended Staffing w/Turnover - Berkeley ECC	
Position Title	Total Number of Employees
Shift Supervisors	9
Dispatchers	27





Recommended Staffing w/Turnover - Berkeley ECC	
Position Title	Total Number of Employees
Call-Takers	23
Total PSAP Staff	59

Note that a detailed explanation of the staffing analysis methodology, findings and recommendations can be found in each of the sections below.

6.3 Call-Taking

Call volume is the prime factor in determining the number of trunks, workstations and call-taking positions needed to manage an ECC's projected call-taking workload. Of equal importance in determining the number of staff, is the standards by which an agency complies with call answering. The NENA⁴ and NFPA⁵ standards, used by the Insurance Services Office (ISO), is to answer 90% of all 9-1-1 calls within 15 seconds and 95% answered within 20 seconds.

The first step in determining staffing levels is to estimate the total telephone call volume the ECC will handle, including 9-1-1, ten-digit emergency, and non-emergency phone calls. To determine these statistics, **FE** used the reported 2021 total call volumes submitted by the City which included incoming 9-1-1 calls, ten-digit emergency and non-emergency phone calls, and outgoing phone calls.

The combined 9-1-1 call volume for the ECC for 2021 including wireline, wireless and Text-to-9-1-1 calls was 56,582, the total ten-digit emergency and non-emergency call volume was 98,041 and the total outgoing calls were 46,811. The total call volume, including all 9-1-1, text-to-9-1-1, ten-digit emergency and non-emergency phone calls, and outgoing calls for the ECC in 2021 was 201,434.

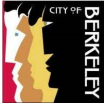
Table 12 - All Telephone Calls

Berkeley ECC – Phone Statistics						
Berkeley ECC	2017	2018	2019	2020	2021	Average
Total Wireline 9-1-1 Calls	13,275	13,720	13,770	12,354	12,666	13,158
Total Wireless 9-1-1 Calls	42,175	45,032	47,811	40,955	43,716	43,938
Total 10-digit Emergency & Non-Emergency Calls	172,761	193,743	174,931	101,725	98,041	148,240
Text-to-9-1-1 Calls	0	0	0	141	200	68
Outgoing Calls	42,312	50,671	52,023	45,666	46,811	47,677

⁴ NENA-STA-020.1-2020, 2.2.3 and 2.2.4

⁵ NFPA 1225, 15.4.1





Berkeley ECC – Phone Statistics						
Total	270,523	303,166	288,841	200,841	201,434	253,081

The next step is calculating the number of call-taker positions requiring 24/7 staff to manage the total call volume for the ECC. The Hourly Call Volume Distribution and Call-taker Count table reflects the monthly and per-hour estimated call volume determined by the busiest month from the 2021 annual statistics by hour supplied to **FE**.

The City provided hourly call volumes for 2021 and that data was used to determine the combined busy hour estimates. The busiest month was determined to be the month of October, which had a total of 20,657 phone calls. The slowest month was February with a total of 14,580 phone calls.

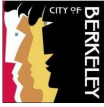
Table 13 - Phone Calls by Month

Berkeley ECC	
2021 Phone Calls	
January	16,065
February	14,580
March	16,514
April	16,298
May	17,179
June	16,268
July	17,288
August	17,208
September	15,081
October	20,657
November	17,224
December	16,895
Total	42,312

The following Hourly Call Volume Distribution and Call-taker Count table also highlights the slowest and busiest hours in a 24-hour period in an hourly table. **FE** arrived at the number of call-taker positions listed in the hourly table by using an Erlang C calculator.

The Erlang C calculator is a traffic model tool developed in the 1970s by telephone companies to project the number of operators needed to manage specified call volume. This tool is the foundation of the current 9-1-1 industry staffing standards and tools available through APCO and NENA. The calculator is enhanced by 9-1-1 industry and individual PSAP data to form a methodology that projects how many full-time equivalent (FTE) staff are needed to process calls. Note that only call-taking positions and number of call-takers are all that these staffing tools can accurately project.





The Erlang C calculations performed by **FE** allow the call-taking performance standards desired to be entered, to arrive at the correct number of physical call-taking workstations that need to be staffed, by hour of the day, to meet those standards. Calculations do not allow two separate service level objectives for emergency and non-emergency calls, therefore the more stringent NENA standard of 90% within fifteen seconds or less is used for both 9-1-1 and ten-digit incoming calls as part of the combined call load.

The call-taker performance standards used in these calculations is 105.3 seconds of call time, as provided by Berkeley ECC. Wrap up time is the time needed after the call has ended to finish a CAD incident with notes and narrative and then to prepare for the next call. For this report **FE** used the current industry best practice of 45 seconds for wrap up time.

The slowest hour of the day is estimated to be at 0400, and the busiest hour of the day is 1500. The table below highlights these periods. This table provides upper and lower call volume from which staffing projections can be estimated. When looking at scheduling on a more granular level, determining the busiest and slowest days of the week, along with hour of those days, allows ECC management to schedule staffing for shifts more efficiently, and based on actual workload.

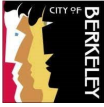
The following best practice and current ECC call performance standards are the metrics used to align the calculations with the ECC workload:

- Service level objective of 90% calls answered within 15 seconds or less
- Average talk time of 105.3 seconds
- Average after-call wrap up time of 45 seconds
- Number of call-takers needed are calculated based on the assumption that they are dedicated positions and do not perform dispatch responsibilities

6.3.1 Observations

- Call-takers in the ECC are not dedicated solely to call-taking functions, they are also assigned dispatch responsibilities for Police Channel 2
- The minimum staffing requirements do not adequately support the call volume and workload in the ECC. There are frequently not enough dedicated call-takers on duty and staff assigned to Dispatch and Supervisor positions are required to answer and process calls.





- While the intention is for Berkeley ECC to be a horizontal center call model with dedicated supervisor, call-taking, and dispatching positions, in its current staffing levels it cannot achieve this.

6.3.2 Recommendations

Table 14 - Hourly Call Volume Distribution and Recommended Call-Takers

Berkeley ECC Staffing Recommendations – Call-Takers			
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed
0:00	2.36%	15.7	3
1:00	2.28%	15.2	3
2:00	2.26%	15.0	3
3:00	1.67%	11.2	2
4:00	1.61%	10.7	2
5:00	1.71%	11.4	2
6:00	2.07%	13.8	2
7:00	3.34%	22.2	3
8:00	4.44%	29.6	4
9:00	5.37%	35.8	4
10:00	5.53%	36.9	4
11:00	6.33%	42.2	4
12:00	6.12%	40.8	4
13:00	5.89%	39.3	4
14:00	6.38%	42.5	4
15:00	6.89%	45.9	5
16:00	6.51%	43.4	5
17:00	5.27%	35.2	4
18:00	4.96%	33.1	4
19:00	4.79%	31.9	4
20:00	4.19%	27.9	4
21:00	3.44%	22.9	3
22:00	3.16%	21.0	3
23:00	3.41%	22.7	3
Total	100.00%	666.4	3.46

FE recommends:

- A minimum of two dedicated call-taker positions in the ECC at its lowest call volume hours, and five dedicated call-taker positions at its highest call volume hours.
- That the call-taker positions be dedicated solely to call-taking operations, and not provide any dispatch functions.
- That all positions be equipped with the same critical technology for CAD, 9-1-1 answering equipment and radio dispatch consoles. This allows any ECC



function, call-taking, or dispatching, to be conducted at any position in the center. This allows supervisors to easily reconfigure operational assignments as needed.

- That minimum staffing requirements are eleven staff on duty during peak time call volume and workload, and seven on duty for non-peak hours
- One additional position for EMD implementation (12 positions during peak call volume periods), and that call volume and workload analysis be conducted regularly to assess operational impacts of EMD.
- Overall staffing increase from 32 currently authorized positions, of which only 27 positions are filled, to 59 authorized positions with turnover. An increase of 32 staff members is required to reach this level.
- Increase to four dispatchers on duty at all times and assign one to Channel 2 and backup for others during the 1000 - 0000 hrs. Call-takers only handle Channel 2 during 0000-1000.
- Staffing recommendations are based on having dedicated call-takers and dedicated dispatchers who do not provide both functions concurrently.
- Increase to two supervisors on duty when there are more than seven staff on duty at a time as per ICS span of control recommendations.

6.4 Dispatching

The next step in estimating staffing is determining the number of dispatch positions that require 24/7 staffing. Currently, there is not a nationally recognized calculation/formula to determine the number of dispatchers needed based on workload. However, if congestion is an issue, radio traffic/usage studies can be conducted to determine the level of use or available airtime of a radio talk group or channel to ensure they are not too busy. This type of study can assist an ECC in determining the number of talk groups or channels needed to support operations but does not directly provide the number of dispatchers needed to staff the required channels.

While there is no scientific method to calculate the number of needed dispatch positions based on the number of incidents or CAD events, **FE** uses a combination of reported CAD events and number of primary dispatch channels currently in use. This information is collected and reviewed along with the other types of criteria listed below when estimating dispatch workstation numbers.

The following CAD Events table shows the number of events for 2017 through 2021, as well as the averages and totals.

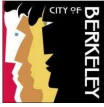


Table 15 - CAD Events

Berkeley – CAD Events						
Agency Type	2017	2018	2019	2020	2021	Average
# Of Law Enforcement Incidents	63,222	56,677	58,422	45,863	62,899	57,417
# Of Fire Incidents	5,538	5,357	5,821	5,348	5,310	5,475
# Of EMS Incidents	10,406	9,972	9,899	8,064	8,760	9,420
Total	79,166	72,006	74,142	59,275	76,969	72,312

To maximize the efficiencies gained by combining the dispatch of various districts, each existing dispatch position should be reviewed to see if combining some of the units on to the same primary dispatch channel makes sense. If a single primary dispatch channel is not feasible, then reducing the number of primary dispatch channels to the lowest number possible, without affecting operations, is always the goal.

It is not a recommended best practice to assign additional tasks to primary dispatchers other than dispatching events. Dispatchers must be available and ready as soon as a new event arrives in CAD, or when a field unit has a radio message for the dispatcher.

This is accomplished by thoroughly reviewing and taking into consideration the following items.

6.4.1 Assignment of Multiple Primary Dispatch Talkgroups

It is a recommended best practice that multiple primary dispatch talkgroups not be assigned to a single dispatcher. A single dispatcher should not be expected to manage more than one emergency event on one channel/talkgroup.

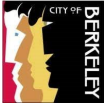
6.4.2 Use of Current Technology to Reduce Radio Traffic

The use of current technology such as mobile data computers (MDCs) or terminals (MDTs) and Automatic Vehicle Location (AVL) should be used to the greatest extent possible to help reduce radio traffic. The exception is for officer location during a dispatch or officer-initiated event or action because the safety of the officer(s) may be negatively impacted.

6.4.3 Tactical or Operational Talkgroups and Channels

The use of tactical or operational talkgroups and channels is common in fire and law enforcement communications to effectively manage event communications, operations, and incident management. A dispatcher should be assigned to monitor and support field





personnel during significant events that require active structure related events, multi-unit incidents, and special or high traffic special operations.

6.4.4 Dedicated Dispatch Positions

The following Dedicated Dispatch Positions table illustrates the recommended number and type of dedicated dispatch positions needed in the ECC. A dedicated dispatch position requires an employee to be assigned 24/7/365.

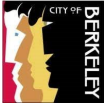
Table 16 - Dedicated Dispatch Positions

Dedicated Dispatch Positions - Berkeley ECC				
#	Position Type	9-1-1 CPE	CAD	Radio Dispatch Console
1	Police Dispatch	Yes	Yes	Yes
1	Fire Dispatcher	Yes	Yes	Yes
1	RB1 Dispatcher (NCIC/CLETS)	Yes	Yes	Yes
1	Police Channel 2 Dispatcher & Support for other Dispatchers as necessary	Yes	Yes	Yes

6.4.4.1 Observations

- Today, there are three dispatch positions in the ECC whose primary role is dispatching; this includes a Police Dispatcher, Fire Dispatcher, and an RB1 Dispatcher. However, the Fire Dispatcher and RB1 positions often support call volume workload by answering overflow calls when needed, and this does not allow them the dedicated focus for radio traffic monitoring and response personnel support, or to monitor for incoming calls in CAD that are ready for dispatch. In an ECC with the call volume that Berkeley experiences, this creates risk in both delayed dispatch or missed calls for dispatch and missing (critical) requests for support from field responders.
- There are three Call-taker positions scheduled between 1030 - 2200 Sunday to Wednesday and 1030 - 0000 Thursday to Saturday who also act as Channel 2 Dispatchers.
- NFPA 1225 (2022) 15.3.2 requires that during major incidents *"When requested by the incident commander, a telecommunicator shall be dedicated to the incident and relieved of other duties within the communications center."* Should a police or fire event require tactical dispatching, there is not sufficient staffing assignments and dedicated dispatch positions in the center to achieve this while covering other call-taking and dispatch operations adequately today.





6.4.4.2 Recommendations

Table 17 - Hourly Call Volume Distribution with Recommended Dispatchers

Berkeley ECC - Staffing Recommendations - Dispatchers				
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatchers Needed
0:00	2.36%	15.7	3	4
1:00	2.28%	15.2	3	4
2:00	2.26%	15.0	3	4
3:00	1.67%	11.2	2	4
4:00	1.61%	10.7	2	4
5:00	1.71%	11.4	2	4
6:00	2.07%	13.8	2	4
7:00	3.34%	22.2	3	4
8:00	4.44%	29.6	4	4
9:00	5.37%	35.8	4	4
10:00	5.53%	36.9	4	4
11:00	6.33%	42.2	4	4
12:00	6.12%	40.8	4	4
13:00	5.89%	39.3	4	4
14:00	6.38%	42.5	4	4
15:00	6.89%	45.9	5	4
16:00	6.51%	43.4	5	4
17:00	5.28%	35.2	4	4
18:00	4.96%	33.1	4	4
19:00	4.79%	31.9	4	4
20:00	4.19%	27.9	4	4
21:00	3.44%	22.9	3	4
22:00	3.16%	21.0	3	4
23:00	3.41%	22.7	3	4
TOTAL	100.00%	666.4	3.46	4.00

FE recommends:



- Increase to a minimum of four dedicated dispatch positions in the ECC at all times. These positions should be dedicated solely to dispatch operations, and not provide call-taking functions.
- That all positions be equipped with the same critical technology for CAD, 9-1-1 answering equipment and radio dispatch consoles. This allows any ECC function, call-taking, or dispatching, to be conducted at any position in the center. This allows decision makers to easily change operational assignments as needed.
- That the goal to cross train staff for call-taker and dispatcher job functions in police, fire (and eventually full EMS) continues.
- That the goal to cross train staff for call-taker and dispatcher job functions in police, fire (and eventually full EMS) continues.

Cross training allows for ultimate flexibility in staffing assignment and coverage. While daily position assignments would change for PSDs, and even throughout their shift, cross training allows any employee to be utilized at any position for call-taking or dispatch in any discipline. This methodology ensures a higher level of efficiency and lower overtime costs. The ability to cross train all staff is a benefit of an ECC this size. As centers grow and become more complex there is a need to split job functions by specialty; but the ECC benefits greatly when all staff can perform dispatcher and call-taker functions in a horizontal call model center.

While a Horizontal call model structure works well in the ECC, it does add a layer of complexity to scheduling and training. However, cross training employees for all functions in the ECC eases the complexity when looking for staff to fill shifts and for Supervisors who need to re-configure the operations floor and/or staff additional positions based on a fluctuating workload throughout the day.

However, we recognize that in the current staffing shortage that the ECC is facing, it may be necessary to augment or pause cross training to accelerate onboarding and training of staff. Ideally, entry level recruits would fill call-taker positions initially, while lateral recruits with existing ECC training and experience could fill call-taker and dispatcher positions quickly upon hire. Entry level recruits could be cross trained for dispatching as capacity and/or staffing levels are increased to support it.

6.5 Supervision

Public safety best practices require 24/7 supervision in the ECC. NFPA has developed codes, standards, and recommended practices through a process approved by the

American National Standards Institute (ANSI). The Technical Committee on Public Emergency Service Communication prepared the latest edition of NFPA 1225, Standard for Emergency Services Communications Systems (2022 Edition). Chapter 15 sets forth the standards for ECC operations: Section 1 of Chapter 15 addresses management:

- NFPA 1225 (2022) 15.3.4 states: *"Supervision shall be provided when more than two telecommunicators are on duty."*
- NFPA 1225 (2022) 15.3.4.1 states: *"Supervision shall be provided by personnel located within the communications center who are familiar with the operations and procedures of the communications center."*
- Annex A of NFPA 1225 (2022) provides further explanation. A.15.3.4 states: *"The supervisor position(s) in the communications center are provided in addition to the telecommunicators positions. Although supervisory personnel are intended to be available for problem solving,"* 15.3.4.2 further states *"The Supervisor shall be allowed to provide short-term relief coverage for a telecommunicator, provided that the telecommunicator does not leave the communications center and is available for immediate recall as defined in the policies and procedures of the AHJ."*

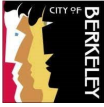
The Standards for Public Safety Communications Agencies (SPSCA), established jointly by Commission on Accreditation for Law Enforcement Agencies (CALEA) and APCO, does not specifically address staffing or supervision in an ECC. However, both sets of standards reference utilizing Incident Command System (ICS) protocols. It should be noted that CALEA Standard 46.1.2 and SPSCA Standard 7.1.2 are mandatory for CALEA accreditation.

The Department of Homeland Security, coordinating with federal, state, and local governments established the National Incident Management System (NIMS). ICS falls under the Command and Management element of NIMS. ICS represents best practices and is the standard for emergency management across the country. ICS requires a supervisor when there are between three and seven persons performing similar functions (the optimal span of control is five). A manageable span of control allows supervisors to supervise and control their subordinates, while allowing for efficient communications between all parties.

While NFPA standards and ICS require dedicated supervisory personnel, there are in-house considerations as well. A dedicated supervisor(s) must be assigned to each shift. Duties shall include, but not be restricted to, the following:

- Provide coordination and direction during major emergency incidents, such as severe weather, high profile incidents, wildfires
- Available for problem solving
- A single point of contact for subscriber agencies
- Readily able to identify areas for growth among subordinates
- Allow for formalized development of career paths
- Document employee performance for annual/periodic reviews
- Provide a narrow scope of supervision when implementing new policies and procedures
- Provide additional supervision for diversified complex tasks
- Stay current with technological changes/advancements
- Provide guidance to new employees who have less training and experience
- Impart greater knowledge of laws, procedures, and administrative processes
- Focus on the operations of the ECC and not have to split responsibilities with a dispatch position
- Focus on customer service to public, subscriber agencies
- Allow for improved communications with management, subordinates, and subscriber agencies
- Spend more time with subordinates individually, daily
- Allow for operational efficiency
- Identify areas for remedial training, counseling, or discipline, when appropriate
- Address issues upon occurrence, not after the fact
- Set operational and administrative priorities
- Allow for delegation of tasks and responsibilities

For the purposes of the supervisor staffing estimate **FE** reviewed the number of call-taker and dispatch positions that needed to be staffed for each hour of the day. Then, using the recommended optimal span of control of one supervisor for every five to ten employees, the average number of supervisors per shift is one, or a total number of five supervisor positions.



6.5.1 Observations

Minimum staffing in the ECC requires a Supervising Public Safety Dispatcher on duty each shift. In the event the Supervisor is absent, there are Acting Supervisors on each shift who can step in and provide supervision.

The Supervisor provides a number of tasks and duties to support staffing and operations, in addition to also assisting with call volume regularly. The Supervisor is not intended to be utilized as team strength except in rare call surge instances. However, due to call volume and staffing shortages, this is not a possibility. In an ECC with the number of staff on duty and call volume that Berkeley experiences, it is difficult for a supervisor to maintain situational awareness, effectively support on duty staff when required, complete supervisory tasks and duties, while also answering and dispatching calls for service.

The current span of control in the ECC is between five – six employees assigned to one supervisor when minimum staffing requirements are met. Optimal staffing assignments would see between six – eight employees on duty during a shift, which places the span of control recommendation over the recommended amount of seven employees to one Supervisor.

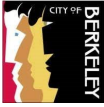
In the recommended staffing section below, the overall minimum staffing recommendation will see upwards of 11 employees on duty during peak call volume periods, placing a single on duty Supervisor outside of span of control regularly.

6.5.2 Recommendations

Table 18 - Hourly Call Volume Distribution with Recommended Supervisors

Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
0:00	2.36%	15.7	3	4	1	8
1:00	2.28%	15.2	3	4	1	8
2:00	2.26%	15.0	3	4	1	8
3:00	1.67%	11.2	2	4	1	7
4:00	1.61%	10.7	2	4	1	7
5:00	1.71%	11.4	2	4	1	7
6:00	2.07%	13.8	2	4	1	7
7:00	3.34%	22.2	3	4	1	8
8:00	4.44%	29.6	4	4	2	10



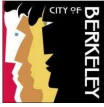


Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
9:00	5.37%	35.8	4	4	2	10
10:00	5.53%	36.9	4	4	2	10
11:00	6.33%	42.2	4	4	2	10
12:00	6.12%	40.8	4	4	2	10
13:00	5.89%	39.3	4	4	2	10
14:00	6.38%	42.5	4	4	2	10
15:00	6.89%	45.9	5	4	2	11
16:00	6.51%	43.4	5	4	2	11
17:00	5.28%	35.2	4	4	2	10
18:00	4.96%	33.1	4	4	2	10
19:00	4.79%	31.9	4	4	2	10
20:00	4.19%	27.9	4	4	2	10
21:00	3.44%	22.9	3	4	1	8
22:00	3.16%	21.0	3	4	1	8
23:00	3.41%	22.7	3	4	1	8
TOTAL	100.00%	666.4	3.46	4.00	1.54	9.00

FE Recommends:

- That as soon as increased staffing levels allow, supervisors not be included as team strength to support workload, allowing them to focus on supervisor duties only.
- That during peak times, when more than seven PSDs are on duty, an additional Supervisor be on duty to provide support.
- That supervisors receive initial and ongoing leadership training as per NENA, NFPA and APCO standards for ECC management and supervision (and as outlined in the Training recommendations section of this report).
- That supervisor candidates receive initial leadership training before they are promoted to a supervisor position and continue to receive ongoing professional development and mentoring once they are in the role. This sets up a new supervisor and their team for success early process, and over the long term in the ECC's workplace environment.





6.6 Methodology for Staffing Recommendation

FE uses the Association of Public-Safety Communications Officials (APCO) Project "Responsive Efforts to Address Integral Staffing Needs" (RETAINS) criteria to determine the number of employees required to staff the projected number of workstations. The following steps, data application and calculations, are performed in accordance with the APCO RETAINS guidance.

The annual number of work hours per employee working twelve-hour shifts is 2,080. The formula begins by subtracting the reported standard leave such as vacation, personal, compensation, training, and sick time, to arrive at the total available work hours per employee. The total number of annual work hours in this study is 1,437 hours per employee, based on the following average human resources criteria, provided by the City:

- Vacation and holiday time - 255 hours
- Sick - 50 hours
- Personal/Comp Time - 80 hours
- Training - 4 hours
- Other - 0 hours
- Lunch/Breaks - 90 minutes per shift

To arrive at the recommended model, the final number of employees required to cover call-taking functions is added to the number required for dispatch functions, and any required dedicated Supervisor positions, to determine the total required number of ECC staff. Based on the estimated hourly call volume **FE** recommends a horizontal operational model with dedicated call-taking and dispatch positions.

6.6.1 Recommended Staffing Model

FE recommends an overall increase from 33 authorized full-time employees, including the Communications Center Manager position, to 55 full time employees (without turnover factored in), and 60 full time employees (with turnover factored in).

The following tables provide the current and recommended personnel count for the City of Berkeley ECC, with and without turnover.



Table 19 - Current ECC Employees

Current Staffing - Berkeley		
Position	Authorized Employees – Full Time	Actual Employees – Full Time
Communications Center Manager	1	0
Supervising Public Safety Dispatchers	4	4
Public Safety Dispatchers	28	23
Total	33	27

Table 20 - Recommended ECC Employees - No Turnover

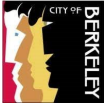
Recommended Staffing Without Turnover – Berkeley ECC	
Position Title	Total Number of Employees
Shift Supervisors	9
Dispatchers	24
Call-Takers	21
Total PSAP Staff	54
Total with Center Manager	55

Table 21 - Recommended ECC Employees - With Turnover

Recommended Staffing with Turnover – Berkeley ECC	
Position Title	Total Number of Employees
Shift Supervisors	9
Dispatchers	27
Call-Takers	23
Total PSAP Staff	59
Total with Center Manager	60

The model above assumes the following:

- 10-hour shifts
- An increase to four Dispatchers on duty at all times.
- Dedicated Supervisors who are not tasked with any call-taking or dispatch responsibilities and more than one supervisor on duty when required to satisfy best practices in span of control.



- Horizontal operational model with dedicated call-takers who do not perform any dispatch responsibilities, and dedicated dispatchers who do not perform any call-taking responsibilities.
- An additional dedicated dispatch position, increasing from three to four positions 24/7.

Based on Erlang C calculations and the RETAINS formula, the projected minimum staffing requirements in the ECC are:

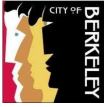
- Seven employees during the slowest hour and 11 employees during the busiest hour

FE calculated this minimum projection using the reported call volume for 9 1 1, ten-digit emergency and administrative/non-emergency calls, text-to-911, and the required number of primary dispatch positions. It is important to remember these positions are listed here more as functions and not necessarily as employee trained skills (e.g., Fire/EMS and Police dispatcher). Cross training in both call-taking and dispatching is required to achieve a full complement of staff and to meet industry standards in the processing of the calls and overall workload. See the table below:

Table 22 - Recommended Staffing by Hour of the Day

Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
0:00	2.36%	15.7	3	4	1	8
1:00	2.28%	15.2	3	4	1	8
2:00	2.26%	15.0	3	4	1	8
3:00	1.67%	11.2	2	4	1	7
4:00	1.61%	10.7	2	4	1	7
5:00	1.71%	11.4	2	4	1	7
6:00	2.07%	13.8	2	4	1	7
7:00	3.34%	22.2	3	4	1	8
8:00	4.44%	29.6	4	4	2	10
9:00	5.37%	35.8	4	4	2	10
10:00	5.53%	36.9	4	4	2	10
11:00	6.33%	42.2	4	4	2	10
12:00	6.12%	40.8	4	4	2	10
13:00	5.89%	39.3	4	4	2	10





Berkeley ECC - Staffing Recommendations						
Hour	% Per Hour	Per Hour for Month	Call-Takers Needed	Dispatch Needed	Supervisor Needed	Total Positions
14:00	6.38%	42.5	4	4	2	10
15:00	6.89%	45.9	5	4	2	11
16:00	6.51%	43.4	5	4	2	11
17:00	5.28%	35.2	4	4	2	10
18:00	4.96%	33.1	4	4	2	10
19:00	4.79%	31.9	4	4	2	10
20:00	4.19%	27.9	4	4	2	10
21:00	3.44%	22.9	3	4	1	8
22:00	3.16%	21.0	3	4	1	8
23:00	3.41%	22.7	3	4	1	8
TOTAL	100.00%	666.4	3.46	4.00	1.54	9.00

Note that these recommendations do not include administrative or additional support/maintenance positions, such as training, QA, systems administrator(s) or support for CAD, telephone, and radio.

The staffing projections represent the number of full time equivalent (FTE) employees needed to staff the ECC at a minimum.

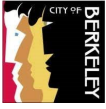
During the lowest call volume period of the day:

- Two dedicated call-taking positions
- Four dedicated dispatch positions
- One supervisor position

During higher call volume periods of the day:

- Five dedicated call-taking positions
- Four dedicated dispatch positions
- Two supervisor positions





6.6.2 Staffing Recommendations for Emergency Medical Dispatch (EMD) Implementation

The staffing analysis included current call volume and workload analysis in the ECC, and because EMD call processing does not currently take place in the ECC there was no data available to include medical call processing accurately, but we will endeavor to consider some supporting data and high-level projections as best as possible.

Berkeley Fire Department responded to 8,761 EMS events in 2021. Of those events, today an average of 105.3 seconds is spent on each medical call by call-takers who will obtain address, call back number, the nature of the incident, and the high-level details of any EMS event, then transfer the call to ACRECC for EMD processing and Pre-Arrival Instructions. Following that, a Berkeley ECC Fire Dispatcher will dispatch an EMS unit to the call.

Once EMD is implemented in Berkeley ECC, the average time on the call will increase from the current 105.3 seconds while EMD protocol and pre-arrival instructions are administered. The Fire Department reports an average response time of seven minutes for most calls in the City. It is likely that for many calls the EMD call-taker will still be on the line with the caller obtaining information and/or providing any pre-arrival and post-dispatch instructions when the EMS crew arrives on scene.

Initially, if the staffing increase recommendations are implemented, and if the EMS call volume levels are similar at that time, the ECC call volume and workload should not be significantly impacted by the addition of time on task for EMD calls. However, it is imperative that ECC leadership continue to regularly conduct a staffing analysis and monitor any workload and staffing impacts that EMD may increase, in addition to regular population and call volume increase for police and fire that will occur.

FE does not recommend actual implementation of EMD until staffing is at adequate levels to support current workload. Once enough staff has been hired for the ECC to operate a minimum of 11 workstations during peak call volume periods as per staffing recommendations, EMD implementation and workload could be sufficiently supported. however, the initiative to procure and implement EMD can begin now, pending the increase in staff. It is not recommended to provide EMD certification training too far in advance of actual implementation. When medical call-taking is implemented, data will be available to analyze for any additional increase in workload/call time. To that end, the ECC will be able to monitor closely and augment staffing accordingly.

A re-evaluation of available statistical call volume and data should be performed bi-annually to validate accuracy in staffing recommendations. Annual audits and calculations



should be performed to track workload fluctuations and to provide support and justification during budget planning when additional staff is needed.

6.6.3 Recommendations for Staffing & Recruiting

The overall staffing increase required in Berkeley ECC is 33 additional staff members to bring the current staffing levels from 27 to 60, including the Communications Center Manager, (with turnover factor included). The ECC is at a critical staffing deficiency and before any other initiatives are implemented, or considered, staffing must be at adequate levels. The stress of call volume and call or incident induced stress, combined with the requirement to work significant overtime to cover shift shortages is resulting in illness and burnout. This, coupled with the natural attrition that will occur in 2022 will place the ECC in a position where efforts to recruit staff will need to continue at an accelerated pace.

Implementing any major new initiatives without first meeting the recommended staffing levels could create circumstances where ECC loses its current, experienced staff due to fatigue, illness, and burnout, while also creating undue risk to current operations.

Further, recommendations with respect to immediate recruitment and hiring are addressed in the High-Level Implementation Plan (Section 4); however, considering the significant increase in staff required in the ECC, it would be reasonable for leadership to develop an interim contingency plan to ensure the ECC is resilient if more employees than expected resign, retire, or become ill. A strategic back-up plan will ensure operations can continue in the face of additional staffing loss. Leadership would need to consider the options available to them and have a plan in place in the event this occurs.

Questions to consider include:

- Would frontline police and fire staff be deployed in the center to support shortages?
- Is another center able to assist by re-routing Berkeley ECC calls to their PSAP?

FE offers the following recommendations and guidance for addressing staffing including:

- Increase the minimum on duty staff from between five - six employees to seven - eleven employees depending on time of day and anticipated call volume.
- Increase overall number of authorized full-time employees in the ECC from 33 to 55 (at minimum) while working toward the recommended 60 full time employees to account for turnover.

- Create and assign a Training and Quality Assurance Coordinator position as soon as possible to assist with planning, coordinating, and supporting the recruitment and training of new personnel.
- To achieve recommended staffing levels in a timely and successful manner, both lateral experienced candidates, along with entry level candidates, must be recruited simultaneously. Every effort should be made to attract candidates who are already experienced and qualified to work in an ECC.
- The recruiting process must be accelerated by creating efficiencies in onboarding entry level and experienced candidates immediately.
- Shorten the process for entry level applicants - explore fast track recruiting for call-taking and Fire Dispatch positions initially without initial POST requirements. (POST requirements can be made a condition of employment to be reached within a specified period upon hire. These employees would not handle police dispatching in the ECC until they have achieved POST certification).
- Review recruiting process and incentives program for lateral experienced candidates. A review of current wages, incentives, signing bonuses, etc., in the region will be necessary to ensure competitiveness in the market. Compare to current practice for any Berkeley Fire and Police lateral/experienced hire program, and other ECCs in the area.
- That the ECC utilize NFPA 1225 (2022) Chapters 4 - 11 Standards and NENA Standards for Hiring and Selection to inform their recruiting practices for the ECC.
- That the ECC continue to follow and adhere to any standards and requirements as indicated by California POST, but that it does not unnecessarily hinder the timely recruiting and onboarding of additional staff.

6.7 Facilities Analysis

6.7.1 Space

Current minimum staffing is seven - one Supervisor or Acting Supervisor, two dispatchers, one records desk operator, and three call-takers. There are eight workstations today, which is insufficient for surge volumes or major incidents. With the recommendation to have a minimum of eleven personnel to handle the existing call volumes and the anticipated EMD workloads, additional space for workstations will be needed.

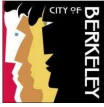
6.7.2 Recommendations:

To accommodate anticipated minimum staffing, and to provide for surge events and training, a total of 15 workstations is recommended. Based on the current footprint of the second floor of the Public Safety Building, there are a couple of options for additional space:

- Option 1: Remove the walls between the current Bike Unit (offices to the east of the current dispatch floor) and take over that contiguous space for seven additional workstations.
- Option 2: Relocate the supervisor and manager's offices (that are to the south of the dispatch floor) and remove the walls between those offices and dispatch and install the additional seven workstations in that space.

6.7.3 Considerations:

- BFD has indicated that they are planning to vacate 70-80% of the space they currently occupy on the second floor and relocate to another facility in the City. This is anticipated to occur in 12 to 18 months. This would allow for a shuffling of space use to allow the expansion of the ECC.
- We recommend an evaluation of the current furniture to determine its long-term usability or if replacement makes sense at this opportunity. We also recommend that an RFI or RFP be developed to allow furniture vendors to propose possible configurations using both existing and new furniture into the proposed space.
- It is still desirable that a supervisor's office be located adjacent to the dispatch floor to allow the supervisors to conduct business in the office but maintain contact with what is going on the dispatch floor. If the second option above is the desired path forward, additional space for a new supervisor's office would need to be in the proposed footprint.
- The Communications Center Manager's office could be relocated into the area that is being vacated by the fire department.
- A Training/Quality Assurance office would also need to be allocated out of the vacated office space.
- During any remodel of the space on the second floor, consideration needs to be given to ensure that all walls and windows in the ECC be impact-resistant in



compliance with NFPA 1225⁶. Any new construction/wiring would also need to be in compliance with NFPA 1225.

6.7.4 Long-Term Needs

Incoming call volume has decreased 27.44% from 2017 to 2021. There were precipitous drops in incoming calls in 2019 and 2020. The year 2020 can be attributed to the COVID-19 pandemic, but the drop in 2019 has not been clearly explained. The 2020 U.S. Census showed a population of 112,580 residents, and in 2020, the Census showed an increase of 11,741 residents for a total of 124,321 residents⁷, which equates to a 0.94% increase annually. In looking at the next ten years, Berkeley has the potential of a 9.4% increase in population.

Table 23 - Incoming Call Statistics

Incoming Call Statistics		
Year	Total Incoming Calls	Percent Change from Previous Year
2017	256,462	-
2018	274,228	6.48%
2019	242,436	-13.11%
2020	200,701	-20.79%
2021	201,237	-0.27%
Percent Change from 2017-2021		-27.44%

Based on this predicted negative growth, the identified facility improvements should last well beyond the next ten years.

6.7.5 Backup Facilities & Business Continuity

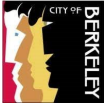
There is no backup center or business continuity plans in place today for the ECC. If there was a catastrophic failure, or a need to relocate from its current location, there is no pre-determined location that has been outfitted to suitably provide a backup facility. Further there is no business continuity plan in place, nor any procedure in place for staff to know where and how to relocate.

The current plan is to use space at the City Hall as a backup location. There are no fixed facilities, just a designated space and City IT infrastructure which is located a block and

⁶ National Fire Protection Association 1225 Standard for Emergency Services Communications, Section 12.7.4 and 12.7.5

⁷ United States Census Bureau, <https://www.census.gov/quickfacts/berkeleycitycalifornia>, 08/19/22, 1400 hrs.





a half away from the ECC. It is recommended that a new location in a distant part of the City be identified (after determining possible hazards for such a location – proximity to freeways and rail lines, altitude from sea level, fault lines, etc.), and plans made for IT infrastructure and telephone service (landline and wireless access).

The 9-1-1 alternate answering point is located at the Alameda County Sheriff's Office (ACSO), but there are no provisions to relocate there. In the event the ECC experienced a critical failure, they would contact AT&T to assist with rerouting the ECC's 9-1-1 calls to the backup site at City Hall once that location was capable of handling incoming calls.

A Continuity of Operations Plan (COOP) should be developed to detail the process of moving to a backup center, either for immediate need/short-term or planned need/long-term occupancy. Such a plan should also include a schedule for employee orientation as well as the testing the COOP on a regular basis.

6.7.6 Recommendations for Back-Up Facility:

FE recommends that the City identify, secure, and equip a suitable back-up facility and create and implement a business continuity plan for the ECC in accordance with NFPA 1225 (2022) Chapter 12 - 12.2 General requirements which state:

12.2.1 Communications centers and alternate communications centers shall comply with Chapter 12.

12.2.2 A comprehensive emergency management plan (CEMP) shall be in place for each communications center.

12.2.2.1 The CEMP shall comply with the applicable requirements of the NFPA 1600 and additional requirements specified in this document.

12.2.2.2 The AHJ (authority having jurisdiction) shall review the CEMP for currency and applicability annually.

12.2.4 Communications equipment shall be kept in working order at all times.

12.2.5 Each center shall be provided with a designated primary means of communication that shall be compatible with the designated primary means of communication provided at Emergency Response Facilities (ERFs).

12.2.5.1 Each center shall be provide with an alternative means of communication that is compatible with the alternate means of communication provided at the ERFs.



12.2.5.2 The alternate means shall be available to the telecommunicator in the event of failure of the primary communications system.

12.2.6 Each jurisdiction shall maintain an alternate communications center that meets the criteria in 12.2.6.1 and 12.2.6.2/

12.2.6.1 The alternate communications center shall be capable, when staffed, of performing the emergency functions performed at the primary center.

12.2.6.2 The alternate communications center shall be separated geographically from the primary communications center at a distance that ensures the survivability of the alternate center.

12.2.6.3 Each jurisdiction shall develop a formal plan to maintain and operate the alternate communications center.

12.2.6.3.1 The plan shall include the ability to reroute incoming event and alarm traffic to the alternate center and to process and dispatch events at that center.

12.2.6.3.2 The plan shall be included in the CEMP.

12.2.6.4 When operations are from the alternate communications center, receipt, transfer, processing and dispatching of alarms and events in accordance with the requirements of this standard shall not be dependent on the functioning of any equipment at the primary communications center.

12.2.7 The communications center shall be capable of continuous operation long enough to enable the transfer of operations to the alternate communications center in the event of a dire or other emergency in the communications center or in the building that houses the communications center.

FE also recommends that:

- The back-up center should be set up to function as both a standalone relocation facility when required, and one that could also operate in parallel with the primary center when needed.
- The facility must contain enough workstations, technology, and facilities necessary to support long term operations should a lengthy relocate be required.
- The back-up center should be as close to a mirror image as possible to primary center – when staff must relocate, they should have equipment and technology set up the same as the primary center at each workstation. A relocate is usually for emergent and stressful reasons; this is not the ideal time for staff to have to

think about everything they need to do because the equipment is set up differently than at the primary center.

- Whenever technology updates occur in the primary center, there must also be a procedure to update the back-up center at the same time. This ensures compatibility and well-functioning technology and equipment at both locations.
- Regular testing and drills where staff relocate to the back-up center to work a shift is necessary to ensure proficiency and familiarity when an actual relocate is required. This also ensures equipment is tested regularly and mission ready.

6.7.7 Recommendations for Business Continuity:

Investigate partnership with a neighboring center in the region for overflow/back-up 9-1-1 calls to be routed for call answer & dispatch during call surge, critical failure, and/or center evacuation and relocate incidents.

6.8 Next Generation 9-1-1

NENA and other organizations are working on NextGen 9-1-1 (NG9-1-1) standards development, CAD system interoperability and the exchange of information between those applications. As these standards continue to evolve, they should be monitored, considered, and incorporated in any new interfaces between NG9-1-1 applications and CAD systems.

The State of California 9-1-1 Branch reports that the Northern Region of California will transition to Next Generation 9-1-1 (NG9-1-1) by December of 2023. All 9-1-1 Customer Premise Equipment and software must be certified by the 9-1-1 Branch as NG9-1-1 compliant before it can be cutover to the Regional and State-wide ESInet. For the most part, the transition to NG9-1-1 will be transparent to the dispatchers, and no major changes in software is needed.

Some of the same standards can be used for any future CAD-to-CAD interfaces. Many of the CAD vendors are still assessing their future need to interface and accept the additional information that NG9-1-1 data will provide. At the same time, vendors are trying to determine the actual cost that will be encountered as the needed functionality is developed and deployed.

In the first phase of NG9-1-1 implementation there will not be a significant impact to frontline staff workload. The first phase of implementation will consist primarily of new technology infrastructure for the NG9-1-1 system and will encompass new call handling

technology. The impact will consist primarily around the new technology training and internal process changes for frontline staff.

6.8.1 Recommendations

The ECC should continue to work with CalOES on the implementation of Next Generation 9-1-1 (NG9-1-1).

It was reported by IT that the Berkeley ECC is ready for the migration to NG9-1-1 and noted that they are fully compliant with the NENA i3 Standard for Next Generation 9-1-1. It should be noted that the State of California NG9-1-1 migration plan is to be completed in Alameda County no later than December of 2023.

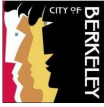
While there is no immediate urgency to add additional staffing specifically for the NG9-1-1 transition in the preliminary stages, there will likely be additional staffing requirements in later phases of NG9-1-1, such as when media interfaces to 9-1-1 are introduced. This is a primary reason current ECC staffing must be adequate going into NG9-1-1 and that ECC leadership monitor call volume and workload closely to ensure adequate staffing levels and shift patterns support operations to augment staffing accordingly.

It is important to monitor not only call volume but also utility rate, or time required on tasks, as NG9-1-1 implementation progresses. Call volume alone will not provide an accurate understanding of total workload capacity and activity rate, which can be affected by ancillary tasks and further processing time and action required for calls involving text messages, video and pictures and other methods of receiving 9-1-1 calls and obtaining and processing information.

6.9 IT Support Model

The Information Technology (IT) team is an integral component for any public safety agency. Therefore, it is critical that the existing IT staffing and support model be considered in a project of this nature which combines a staffing analysis for the ECC, EMD implementation feasibility, and pilot project support for the Specialized Care Unit initiative in Berkeley. Every project and new program, along with the policy and process that accompany them, at many points, have overlap and integration with technology and systems.

New programs and processes may require augmentation to the current system, the introduction of a new process and/or technology, and the knowledge, skills, staffing



capacity, and business process in place to implement and maintain them from an IT perspective.

Today, the ECC, BPD and BFD are supported by two dedicated IT resources who are responsible for all IT related issues. PSAP staff are directed to report problems to the help desk which in turn contacts the IT resource with the details of the problem or situation. The help desk operates daily from 0900 to 1700 and is staffed by seven help desk professionals.

The list of IT responsibilities has grown substantially over the past five years, with the introduction of body cameras, the issuance of iPhones, ruggedized laptops, and iPads.

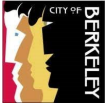
It was reported that overall, there are approximately 1,800 applications running Windows 7 throughout the Public Safety system.

Many of the ECC related issues are evaluated through remote access. Software update patches are usually performed Thursday mornings at 0500.

It was also reported that the various hardware upgrades to the ECC are currently behind schedule.

Regarding the migration to NG9-1-1, it was reported that the ECC is NG9-1-1 ready and meets the National Emergency Number Association (NENA) i3 Standard for Next Generation 9-1-1.





7. Call Processing & Workflow Analysis

7.1 Call Flow Description

Calls for the City of Berkeley ECC are received from 9-1-1, ten-digit emergency and non-emergency calls, and text-to-9-1-1 methods. Each staff member has the option of recording their voice with the initial 9-1-1 greeting, and when they answer a 9-1-1 line, the automated system will provide the initial greeting for them, while they prepare for the remainder of the call-taking process. This is an optional feature in the ECC phone system, and not all staff use this feature.

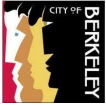
Once the 9-1-1 call is answered, ANI/ALI information is available and interfaced to drop into CAD for 9-1-1 calls received. The phone technology does not have an Automatic Call Director (ACD) system that directs 9-1-1 calls to specific workstations or in specific rotations. Instead, 9-1-1 lines ring at all phones on every desk each time a call comes in. When there are additional 9-1-1 calls waiting to be answered beyond what is showing up on the 9-1-1 phone sets, there are no queue systems or visual/audible alarms in place to notify ECC staff. This may contribute to a higher-than-average amount of abandoned 9-1-1 calls in Berkeley ECC, despite an average call answer time of 10.9 seconds.

The ECC is designed to operate in a horizontal call model where there are separate call-taker and dispatcher workstations that provide one or the other role, but not both. However, due to a combination of call volume and staffing shortages, it must frequently operate as a hybrid vertical/horizontal call model where at times Supervisors and Dispatchers are answering 9-1-1 overflow calls and dispatching resources to those calls, in addition to the other calls to which they are tasked with dispatching resources.

There are workstations assigned specifically for supervision, call-taking, and dispatching. All Supervisor, dispatch and call-taking workstations have CAD, phone call handling, and radio console technology and are capable of full call-taking and dispatch. The Records Desk (RB1) is unique as it has a records (green) screen to check wants and warrants. The Fire Desk has been assigned as a static station and does not move around the room; BFD requested that they have one desk to go to in the same spot each shift to access the Fire Dispatcher easily.

All 9-1-1 calls are first answered on the call-taking workstations. While calls are answered in these positions first, each workstation in the ECC is outfitted with all 9-1-1 lines, ten-digit emergency and non-emergency phone lines, and the Rapid Deploy Text to 9-1-1 solution. In the event all call-takers are already on 9-1-1 calls, overflow 9-1-1 calls will be answered and processed by the Supervisor, or by the Fire dispatcher, or by RB1. The





Police Dispatcher often does not have the capacity to answer calls and still provide dispatch and support to field responders due to the volume and workload of police calls in the ECC. The Police Dispatcher would only answer calls in extreme circumstances.

Once a call is answered, staff complete the police or fire call-taking process in CAD, and the call drops into the pending screen for dispatch at the respective police or fire CAD terminal to be dispatched.

Police calls are assigned by beat, and there are 16 beats across the city. Eight to nine patrol officers are responsible for two beats between 0130-1100 Monday – Thursday, and 0230-1130 Friday - Sunday. There are 1-2 teams working at a time, with two Sergeants per team and one Lieutenant (Incident Commander) on duty.

Fire calls are assigned by Station District; there are seven stations across the City capable of Fire and EMS response. Each station has a duty Captain, and a Battalion Chief is on duty at all times.

7.2 Call-Taking and Dispatch Processes

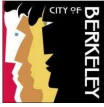
7.2.1 Police Call-Taking Procedure

Berkeley Police Department created policy and procedure specifically for the call-taking and dispatch of police incidents. There is no specific detailed format for call-taking interrogation where it is consistently applied among all call-takers. ECC staff are trained to the policy and procedure which guides their call-taking and dispatch processes. These policies are not accessible to the staff either via desktop or binder at the workstation; however, policies are available via web-based application called Lexipol Policy and Procedure or through individual email search. There is an expected procedure for hot calls, cold calls, and alarm calls with primary and secondary questions based on basic who, what, where, when and why questioning. Training binders outline general expectations for the call-taking process. As there is no Quality Assurance process in place, there is no way to confirm the various policies are being followed.

7.2.2 Fire Call-Taking Procedure

Fire call-taking and dispatch is also guided by policy and procedure. The policy and procedure are informed by BFD policy, procedure, and response plans.





7.2.3 9-1-1 Call Triage and Process

The following describes the initial 9-1-1 call answer triage and process methodology in the ECC:

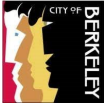
- The call-taker answers the 9-1-1 line on the Intrado 9-1-1 call handling screen and triages the call asking, "Berkeley 9-1-1, what is the location of the emergency?". This is done to ensure it is for Berkeley's service area. If it is not the call-taker will reroute the caller to the correct 9-1-1 center.
- Out of district calls are often received and routed to correct PSAPs in:
 - Oakland
 - California Highway Patrol (CHP)
 - Albany
 - UCPD
 - Emeryville
 - East Bay Regional Parks
- The call-taker continues with the call-taking triage process by asking 'What is your emergency?'

7.2.4 9-1-1 Call for Berkeley Police Service

The following describes the workflow process for triage and processing 9-1-1 calls for Berkeley Police Service calls:

- The call-taker verifies the address and nature of the call and enters this information into CAD. Additionally, the call back number of the caller and the caller's name is also obtained but may not always be obtained until later in the call.
- Once the call type is chosen from the drop-down list in CAD (or entered via command line function), the call priority is automatically assigned according to call type code. The call-taker can over-ride the priority level if circumstances dictate. For priority in-progress calls, the call-taker remains on the line until officers arrive, if warranted.
- The call drops into the pending screen in CAD for the dispatcher assigned to the Police Dispatch workstation. There are no audible or visual signals to indicate to the PSD that there is a new call for dispatch.





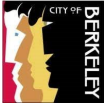
- The dispatcher reviews the incident and priority, and dispatches officer(s) accordingly, keeps track of their status, as well as adding pertinent notes as required.
- Call-takers run queries in NCIC, as well as any other checks necessary for processing calls while preparing the call for dispatch.
- Dispatchers may also run NCIC queries and complete 'Premise Alerts' check for special address information, and any other pertinent information gathering required for officer support.
- Dispatchers maintain radio contact with responding officer(s) and support as necessary and document pertinent call details in CAD comments section.
- Monitor officer safety and perform safety checks as necessary for officer(s) on the call. The officer may request unit alerts. Dispatchers are expected to automatically create a 7-minute unit alert for any self-generated Traffic Stop event. Public Safety Dispatchers must do a verbal check on the officers for these events.
- Once a call is complete, the officer clears from the event using their MDT in the police vehicle, and subsequently transfers the call out of the CAD screen. This indicates that the officer is ready for any pending calls. No dispatch code is required for officers to clear from an event. Each Call for Service (CFS) has a unique event number automatically created in CAD.

7.2.5 9-1-1 Call for Berkeley Fire Department Call

The following describes the workflow process for triage and processing 9-1-1 calls for Berkeley Fire Department calls:

- The call-taker verifies the location of the emergency, the nature of the call, and the type of structure (if applicable), and then enters this information into CAD.
- If the caller does not know their location on a wireless 9-1-1 call, the call-taker will utilize Rapid Deploy to find their location.
- There are 80 or more call types to choose from that a call-taker must know; and some have only numbers for the call type to choose in CAD, no description next to it. Often PSDs will have to refer to "cheat sheets" they have created for quick reference to choose the correct call type code in CAD to create the call.
- Additionally, the call back number of the caller and the caller's name is also obtained but may not always be obtained until later in the call.





- Once the call type is chosen from the drop-down list, the call is ready to be entered into pending. An audible alarm signifies a new call.
- Once in the pending screen, the call will present on the Fire CAD and be ready for dispatch. Once the call is selected, unit recommendations will automatically be presented to the Fire PSD based on criteria such as call type, priority, and location.
- The PSD will confirm the correct units are recommended against the response plans and will add additional units if required based on new information.
- The units will be marked as dispatched in CAD, and the PSD will use a combination of the ComTech station alerting system, the radio, and CAD to dispatch the necessary personnel and apparatus. The station alerting process is not automated; the Fire Dispatcher must select the station(s) to be sent an alert, then follow a series of steps including:
 - Select the radio channel and send an alert (by pressing the lightning bolt icon) and select "3" from the drop down - this sends 3 beeps
 - Structure fires are a different set of tones - they are one long three second tone, sent by selecting "1" from the dropdown menu
 - The Fire Dispatcher must perform this series of steps in ComTech BEFORE the Recommendations button is activated in CAD
 - Then the PSD will provide voice dispatch with what the call is for and what district(s) is required to respond
 - Then the recommendations button can be selected, and units can be attached to the call
 - The previous step will open the ComTech system so that the voice information can be heard over the PA system at the required stations. The Fire Dispatcher will check to make sure station radios show green, then voice the message to corresponding crews on the radio
- The call information also presents on the fire apparatus Mobile CAD (MDTs). Crews will acknowledge receipt of the dispatch on the MDT. If they do not mark themselves enroute after two minutes, an alarm timer will present in CAD and the Fire Dispatcher will follow up with the crew to check status. Note - the alarm timer is visual only, there is no audible tone to grab attention when it goes off.
- Often the crew will not voice over the radio that they are responding, so the Fire Dispatcher must watch closely for the unit to show responding in the CAD so they can provide the call information and any updates over the radio.

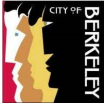


- The dispatcher will continue to support the crew with status updates, support requests, capturing ICS or Blue Card benchmarks, and performing and recording any other supportive measures as requested by the Incident Commander.
- Once the crew returns to service, they will use their Mobile CAD to indicate such, and this transfers the call off the active incidents in CAD and indicates the fire units are ready to be assigned to any incoming calls.

7.2.6 9-1-1 Call for EMS

The following describes the workflow process for triage and processing 9-1-1 calls for EMS:

- When EMS is requested the call-taker will verify the location of the emergency and enter "Medical" in the CAD call type and narrative/notes.
- They will then obtain further details such as the chief complaint or symptoms, patient's age, and sex, and COVID screening questions. They will enter this information into CAD, advise the caller that medical is on the way and ask the caller to stay on the line while they transfer them for further instructions.
- A supervised call transfer is conducted to ACRECC, and the call is introduced to the EMS call-taker along with the address, nature of call, and patient details provided to ECC. They wait to hear if the person speaks and then disconnect.
- Sometimes the call-taker will stay on the line for high priority calls such as CPR. This allows them to gather information sooner so the responding EMS crew can be updated quickly. There is no policy that directs the call-taker to stay on the line. If there are updates to patient condition or scene safety concerns, ACRECC is directed to call Berkeley ECC back with the information. There is no electronic means of sharing call information between Berkeley ECC and ACRECC CADs.
- Simultaneously the call information in CAD is entered as a medical call, and entered into pending, where it presents on the Fire Dispatch workstation. An audible alarm is received to indicate a new call is ready for dispatch.
- Once the call is selected, unit recommendations will automatically be presented to the dispatcher based on criteria such as call type, priority, and location.
- The dispatcher will confirm the correct units are recommended against the response plans and will add additional units if required based on new information.

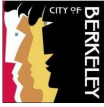


- The units will be marked as dispatched in CAD, and then the Dispatcher will utilize the same steps for alerting the crew(s) using ComTech, radio and CAD as outlined in Fire call flow description.
- The station alerting process is not a fully automated; the Fire Dispatcher must select the station(s) to be sent an alert, then follow a series of steps including:
 - Select the radio channel and send an alert (by pressing the lightning bolt icon) and select "3" from the drop down - this sends three beeps
 - The Fire Dispatcher must perform this series of steps in ComTech BEFORE the recommendations button is activated in CAD
 - Then voice what the call is for and what district(s) is required to respond
 - Then the recommendations button can be selected, and units can be attached to the call
 - That will open the ComTech system. The Fire Dispatcher will check to make sure station radios show green, then voice the message to corresponding crews on the radio
- The call information will also present on the EMS apparatus Mobile CAD (MDTs). Crews will acknowledge receipt of the dispatch on the MDT. If they do not mark themselves enroute after two minutes, an alarm timer will present in CAD and the Fire Dispatcher will follow up with the crew to check status. Note - the alarm timer is visual only, there is no audible tone to grab attention when it goes off.
- Often the crew will not voice over the radio that they are responding, so the Fire Dispatcher must watch closely for the unit to show responding in the CAD so they can provide the call information and any updates over the radio.
- The Fire Dispatcher will continue to support the crew with status updates, support requests, capturing benchmarks, and performing and recording any other supportive measures as requested as provided by ACRECC.
- Once the crew returns to service, they will use their Mobile CAD to indicate such, and this transfers the call off the active incidents in CAD and indicates the fire units are ready to be assigned to any incoming calls.

7.2.7 9-1-1 Call for Mental Health Incidents

The following describes the workflow process for triage and processing 9-1-1 calls for mental health incidents:





- When the caller indicates the nature of the call is a mental health issue, the call is dispatched to Berkeley PD.
- A mental health call is initially dispatched to a Police unit and the call will be entered and dropped into Police CAD (Channel 1) for dispatch.
- Police will respond first to secure the scene and will call MCT (if available) to determine if the patient is "5150". Patrol will then request a Mental Health (MH) response to take over the 5150 calls. Dispatch contacts the Mobile Crisis Team (MCT) by radio if it is noted that they are available for response. Although nearly all officers are Crisis Intervention Training (CIT) trained, they prefer MCT handles the 5150 because they have the expertise in this area. If a transport is required, a contracted ambulance agency is requested.
- Once the call is complete, the officer will mark themselves back in service on their MDT and the call will transfer out of CAD.

7.2.8 10-digit Emergency Lines

Calls received on the 10-digit emergency lines are typically from alarm monitoring companies or other allied agencies who are transferring non-9-1-1 calls or requesting assistance at an incident. Since these calls are not received through the 9-1-1 system, ANI/ALI information is not available for them. The call location and nature of the incident is collected and entered into CAD along with the callback number, caller's name, and any other pertinent details related to the call, specifically regarding scene safety.

7.2.9 Non-emergency Police Complaint Line

The non-emergency police complaint line is dedicated as a non-emergency line for the public to call for police assistance. Many calls for service are received on this line of varying nature from parking complaints to information requests. Often calls that would have been better made through the 9-1-1 system and can be high priority in nature, are also received on this line, but the caller has opted instead to use a non-emergency line. The disadvantage of receiving high priority calls on a non-9-1-1 line is that ANI/ALI information is not available to the call-taker and can at times make location verification difficult.

7.2.10 Ten-digit Non-Emergency Lines

Calls for service are received on the ten-digit non-emergency lines and include general, public inquiry lines, as well as Animal Control requests for dispatch. Additionally internal requests for City departments handled by ECC are received on these lines and include



service for the City's Public Works and Utilities Department, which include Facilities Management, Fleet Management, Landscape Maintenance, and Streets Maintenance.

7.3 Observations

There are many process and technology barriers that create inefficient workflow and risk in police, fire, and medical call-taking and dispatch. As can often occur in public safety, ECC staff are working for technology (or finding work arounds to overcome barriers) rather than technology being set up to work for the ECC. These issues are addressed in the recommendations below.

7.4 Recommendations – Call Processing

7.4.1 Workflow and Operations

This section provides **FE's** observations and/or recommendations for call processing workflow and operations:

- There is a significant amount (in excess of 80) of number-based codes to choose in CAD when entering call types. PSDs must recall the number for the call type - there is no description beside it to explain what it is. This needs to change as soon as possible. This adds time and risk for entry error when staff must remember over 80 different call type codes for calls. **FE** recommends that the Chief Complaint/Call Type Description be added beside each numbered code in the drop-down menu in CAD, then organize the codes with their description in a fashion that makes logic and sequential sense for choosing the correct code quickly during call entry and make the drop-down pick list searchable by number or description for flexibility and ease of use for PSDs. The call type codes can be changed again once EMD and EFD is implemented if Berkeley chooses to show the specific EMD and EFD chief complaint descriptions in place of the current CAD call type codes, or the EMD and EFD call types can be added as an additional field on the call form screen in CAD. The EMD and EFD call types give detailed descriptions of the chief complaint/call type.
- Among other benefits listed in Section 6.3.3 *Implementation of EMD Protocols*, EMD implementation will immediately create workflow and call process efficiencies, such as removing the need for callers to re-verify address upon transfer to ACRECC, ability to update EMS crew based on real-time information and accessibility to pre-arrival instructions for callers.

- **FE** recommends that the ECC, in collaboration with Berkeley Fire, implement a fully automated station alerting system that is integrated with CAD and provides automated voice dispatch triggered by the CAD system upon dispatch. The current system and process for station alerting consists of a heavily manual process with many steps to achieve station alerting. A fully automated station alerting system provides consistency and efficiency in dispatching and voice alerting for response crews while allowing the PSD to remain focused on the core activities of ensuring the correct units are sent while watching for situation updates and being able to respond accordingly.
- There will be a gap in time between now and when the ECC is staffed adequately to implement EMD protocol. In the interim, **FE** recommends that the ECC prioritize creating a two-way CAD to CAD interface between Berkeley ECC and ACRECC to receive real time medical call information and updates in CAD and on the MDTs in the EMS/Fire units.
- **FE** recommends that a detailed audit of ECC call flow and a business process analysis be conducted to identify areas where efficiencies can be created and risk can be reduced in the call-taking, dispatch, information exchange, and records management process. Time and accuracy are of the essence in the call-taking and dispatch portion of emergency response; it has significant impact on the remainder of the overall response and call outcomes. On initial observation, there are many process and technology barriers that stand in the way of ECC staff being able to do their work efficiently, yet they still manage to, which is a testament to their dedication and professionalism.

7.4.2 Call-Taking and Dispatch Protocols

The ECC does not utilize an industry specific call-taking and dispatch protocol such as the International Association of Emergency Dispatch (IAED) Emergency Police Dispatch (EPD) protocol, Emergency Fire Dispatch (EFD), APCO Protocol, PowerPhone, Criteria Based Dispatch (CBD) or other similar industry protocols.

7.4.3 Implementation of EMD Protocols

FE recommends implementing a commercial, standardized call-taking and dispatching protocol for police, fire, and medical disciplines in the ECC. A standardized protocol creates efficiency and consistency in call processing, dispatch, and training for staff. This ensures consistent and high-level service delivery to callers and field responders. It creates a uniform methodology for information gathering of the most critical and safety sensitive information early in the calls, and for providing post-dispatch and pre-arrival

instructions such as CPR, childbirth, choking, caller in danger, sinking vehicle, or caller trapped in a burning building. Further, it allows for effective quality assurance and standards for compliance/performance and excellent quality improvement and training opportunities.

In Alameda County, agencies are required to have all medical calls processed using the International Academy of Emergency Dispatch (IAED) Emergency Medical Dispatch (EMD) protocol. While **FE** is vendor neutral and does not specifically recommend any one vendor for agency solutions, in this instance we do recommend that IAED EMD protocol be implemented in the ECC, so that BFD maintain compliance with EMD call triage and dispatch and continue to receive its ALS funding.

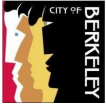
EMD and medical call-taking should not be implemented until staffing levels in the ECC have increased to the point that the recommended staffing levels can be achieved regularly. Any initiatives that create additional workload and time on task for call processing without the necessary staffing to support it, will cause significant undue risk and detrimental impacts to operations.

7.4.4 Implementation of EFD & EPD Protocols

Once the appropriate staffing levels have been met, and EMD has been implemented, the ECC staff, BFD staff, and support staff have had a “burn in period” where the necessary reviews and tweaks have been made to support its efficient use, **FE** recommends that a commercial fire call-taking dispatch protocol be considered and implemented, followed by Police call-taking and dispatch protocol. In this instance, there will be congruency and efficiency in investigating the IAED fire and police protocol systems for suitability; ECC staff will already understand the principles and fundamentals of protocol functions, making training, use, quality assurance/improvement, and eventually accreditation, much easier.

7.4.4.1 Accreditation

Pursue Accreditation through IAED EMD and EFD. Once established, and with the staffing to do so, the ECC can also add CALEA and/or any Fire Service Accreditation that Police or Fire choose.



8. Crisis Response

Most officers of the Berkeley PD are trained in some form of Crisis Intervention, and many officers have attended the 38-hour Crisis Intervention Training (CIT) course. These officers can be identified by a CIT pin worn on their uniform. Callers contacting the ECC for police response can request that one of these officers respond to their request for service.

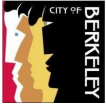
In addition to the CIT trained officers, the City of Berkeley has a Mobile Crisis Team (MCT). This team consists of mental health clinicians available for dispatch via police radio. Their proposed schedule is five days a week (11:30 AM to 10:00 PM), however, due to staffing issues the team is struggling to provide service during the hour put forth. The Team's goal is to reduce the impact of mental health emergencies through immediate response at the street level and through consultation with other community groups. MCT log on and are indicated in CAD as 'MH' call sign. They have a police radio and a marked "City of Berkeley" vehicle. They rarely respond first instance to calls for service, they are requested to respond by patrol officers at the scene, most often to assist with a 5150 designation. MCT also has a direct line that the public can call and leave a voice mail. MCT will respond proactively to VM requests for service first instance when deemed safe to do so; however, calls for service received by the ECC must dispatch officers first to declare the scene safe. When transport is required, the team relies on Basic Life Support (BLS) unit assigned to Berkeley 5150s, contracted by Falck Ambulance Service. The City of Berkeley contracts Falck Ambulance Service at a cost of \$2.7 million annually to have this unit available for their 5150 calls.

The City of Berkeley recommended several reforms in response to recommendations made by the City's process to 'Reimagine Public Safety.' These reforms included, in part, the development of a Specialized Care Unit (SCU). Resource Development Associates (RDA) were contracted to conduct a feasibility study that included community-informed program design recommendations, a phased implementation plan, and funding considerations. The SCU will ultimately become a 24/7 mobile unit designed to respond to and support people who are experiencing a mental health or substance use crisis without direct involvement of the police. The SCU will be different than the City's current mobile crisis response that is perceived as a police/mental health partnership.

The SCU comprises a mental health specialist, a peer specialist, and a medical professional. The three-person team has three distinct roles to provide a range of specialized services with the goal of engaging in collaboration to address crisis.

SCU is currently in the RFP process to contract with a community-based organization to implement and administer the program. Their plan is to respond to calls ranging from





crisis and 5150 evaluations to substance use, and a variety of other behavioral health issues and non-emergency medical care. They would prefer to have their own phone line but realize that 9-1-1 will still be utilized by the public.

SCU has specific systemic goals; however, they have not yet developed clear direction or criteria on specific calls for service that warrant or prohibit their response. The program was implemented in response to community driven recommendations. There has not yet been a law enforcement or ECC collaboration to establish a systems-mapping process, no collection of baseline data prior to implementing the RFP, and no logic model to input or evaluate metrics.

The *City of Berkeley Specialized Care Unit Crisis Response Recommendations Report* listed a number of calls for service for SCU response that will be concerning for the ECC, the SCU staff, and the City of Berkeley. Those recommendations may or may not be implemented by SCU. Whatever calls for service eventually deemed appropriate for SCU, and the other units involved in the continuum of care, it is imperative that a risk assessment and triage process be developed prior to 'go-live' with all stakeholders included. This process must consider risk to public and to the SCU staff and must involve subject matter experts (dispatchers and Sworn Frontline Officers).

Community input is of the utmost importance; however, community members lack the expertise to develop the risk assessments necessary to create the call flow process. The report mentions that there is a concern regarding the ECC and their comfort level deploying SCU because the ECC is housed in Berkeley PD HQ, and a suggestion was made to move the ECC to improve coordination and collaboration. This statement may or may not have influenced the decision to not include Berkeley PD or the ECC in the existing Steering Committee for the SCU. The community wants to ensure this initiative is not police driven; however, the ECC will be receiving calls from the public for calls appropriate for SCU, therefore is inherently involved, and must take the lead on the development of the risk assessment for dispatched calls.

The report indicated the plan to 'train and prepare' dispatch to ask the right questions and have a decision tree, however, this process has not yet begun. Effective change management must employ early and effective engagement with project stakeholders to mitigate risk. Dispatch needs to be involved early in the project and be kept involved throughout. Waiting until a new project is developed, misses an opportunity to involve stakeholders to benefit the quality and ensure success. Early engagement builds commitment. Commitment is built when change is not being done to them, but rather, with them; when users helped develop the change and have become partially responsible for the success.



The report also recommended using data from major medical systems, Community Health Records (CHR) and Alameda County's Yellow Fin, and to collect and publish that data on Berkeley's open data portal. Specific stipulations to not use CAD data are mentioned in the report, yet the data collected (speed of deployment, determinations, and dispositions of Dispatch) are specifically mentioned.

8.1 Observations

Because the SCU is still in the implementation phase, no formalized process has been developed to identify, categorize, triage or dispatch calls that are appropriate for their response. For the ECC to effectively support an important and dynamic initiative like SCU they must:

- Be equipped with an understanding of the program, along with the training, process, policy, and the skills to respond efficiently and effectively to behavioral health-related calls.
- Have the capability to identify calls related to behavioral health needs and the process to route those calls to the appropriate services or responders.

ECC staff expressed concern about not being included in the planning and implementation process of the team and are feeling disconnected from the program.

Statewide implementation of 9-8-8 as the national mental health crisis and suicide prevention number was implemented in July 2022. The ECC has no developed process for transferring 9-1-1 calls to 9-8-8 for telephone support and referral to services. There is no current understanding of how the continuum of care will work utilizing the various points of dispatch diversion. Alameda County has started discussions around 9-8-8; however, neither the SCU nor the ECC have a clear understanding of how the process will be integrated with current systems. It is essential that this process begin now to ensure proper planning, process, policies, and staffing are in place prior to implementation.

8.2 Recommendations

FE recommends that a workshop facilitated by **FE** be held that involves all stakeholders with the objective of establishing preliminary triage criteria, workflow methodologies, as well as process and protocols that enable effective call-taking and dispatch processes for the Specialized Care Unit Pilot Program. The purpose of this workshop is to build collective capacity to produce an improved understanding of the collaborative risk-mitigation process; and to facilitate a working linkage between the actual practitioners

engaged in efforts to improve service to vulnerable persons. The ongoing community concerns with police involvement in alternative response have inhibited the ability of all stakeholders to connect, share, and explore opportunities for improving the overall response to behavioral health calls for service and in turn measuring the effectiveness of said response. Although understandable, with the current political climate, engaging all stakeholders is important to ensure successful implementation of a process change of this magnitude.

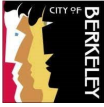
A clear benefit of hosting such a workshop is the opportunity to involve key stakeholders and supporters of the program in this dialogue. Doing so will help foster a bridge between evaluation and practice. The topics explored in this event will include opportunities to improve/strengthen the relationship between stakeholders, create the required processes and policies, create performance indicators for SCU, and identify new methods for valid and reliable outcome measurements of the program. The format of the workshop will be largely discussion focused. This workshop will provide an opportunity to align goals and strategically develop a plan to ensure that all stakeholders understand what is required to support the goals of the program.

Stakeholders will brainstorm and collaborate to:

1. Conduct a systems-mapping exercise to inventory existing crisis services
 - a. Determine which calls for service are appropriate for SCU response
 - b. Differentiate the calls that require MCT vs SCU deployment
 - c. Outline MCT current process and diversion possibilities
 - d. Identify other diversion options in the City of Berkeley
2. Identify the calls eligible for diversion, consider a 'phased approach' to ensure capacity with existing team, future expanded team, and 9-8-8 implementation.
 - a. Develop a Dispatch Risk Matrix to accurately classify the SCU appropriate calls for service.
 - b. The process requires a sequential implementation of selected calls for service to slowly build the program with continuous QA review and QI process improvement to build success and credibility.
 - c. The process needs to consider alternative response when SCU is unavailable
 - d. The process needs to consider future 9-8-8 appropriate calls.
 - e. The process needs to consider future integration with EMD/EFD/EPD.

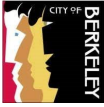
- f. The process requires creation of a Dispatch Steering Committee to continually monitor and evaluate the program and implement required changes when necessary. This committee would be separate from the SCU Steering Committee with the primary focus being that of continued evaluation and improvement of the ECC dispatch of SCU.
3. Identify technological requirements.
 - a. Discuss the CAD codes and RMS classification to delineate SCU appropriate calls for future data mining.
 - b. Integrate the SCU and 9-1-1 phone numbers
 - c. Implement SCU two-way communication with ECC, including emergency notifications.
4. Develop a training and communication plan for all frontline and ECC staff
 - a. Determine the length of training.
 - b. Identify who will deliver the training.
5. Process to ensure quantitative and qualitative data is aggregated from all touch points.
 - a. Consider a Case Management Software program that can provide a data infrastructure and tell SCU's success story.
 - b. Consider an assigned analyst with access to CAD and Behavioral Health data.
 - c. The process must include a QA/QI Process to review calls that were diverted and calls that were not, the final disposition, and any gaps identified.
 - d. The process must ensure methodology for constant revision.
6. Employ legal advisors to create a Memorandum of Understanding for all stakeholders effected by the new process.
 - a. Leadership must collectively accept the risk and ensure continued cooperation and support for the new process.
 - b. Identify positions responsible for sign-off
7. Develop a plan for change management

The City of Berkeley will require continued collaboration and development of partnerships to determine best practices for its diversion programs. Once the best initial pathway for



alternative response has been determined, continued engagement and dialog will support ongoing quality improvement, and innovative and appropriate solutions which will continue to improve public safety and the diversion of mental health crises from criminal justice systems. An effective behavioral health initiative needs to consider diversion all along the continuum of care, starting with the ECC. It is important to state that this workshop is only the beginning, it is the initial systems-mapping exercise to inventory the present, proposed diversion services to ensure that community needs are being met. It will be the vital first step to foster the systemic change required for the success of the Specialized Care Unit in preparation for its proposed December 2022 roll-out.





9. Training Practices and QA Review

9.1 Training

Although the Berkeley Police Department provides administrative oversight of the ECC, the Police Personnel and Training Unit does not provide training support to the ECC. Historically, staff have been left to manage training on their own. There is no designated Training Coordinator position built into the Berkeley Communications Organizational Chart, but this role is filled by an ad hoc Training Coordinator whose full-time role is a Supervising Public Safety Dispatcher, in conjunction with additional Communications Training Officers (CTOs) who fill other full-time roles in the ECC as well. CTOs receive a 5% pay increase while training call-taker, records desk, and fire dispatch positions, and a 10% pay increase when training in Police Dispatch. Increased rates for training are paid only when active training is taking place.

Training program oversight falls to the Training Coordinator in addition to their full-time duties. This position has direct oversight for development and delivery of the communications training program. This role also facilitates the onboarding of new hires with the City of Berkeley and coordinates the delivery of all classroom, theory, and practical training for the new employees.

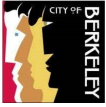
This includes, but is not limited to:

- CAD instruction
- Geography and mapping
- Policies and procedures
- Technology and systems
- Call-taking and dispatch theory
- Simulation and hands-on training

9.1.1 New Employee Training

All ECC new employee training is conducted in house. It consists of a combination of classroom training followed by practical/hands on “at the workstation” training with a training officer. Classroom training takes place at the Berkeley PD multi-use classroom. Practical training involves 1-2 CTOs per phase and the trainee mirrors the shift schedule of the assigned trainer.





9.1.2 Call-Taker Training

All newly hired staff begin with an orientation conducted by the Sergeant from Personnel and Training. This orientation is administrative in nature, signing documents and receiving necessary equipment.

Classroom training is five weeks in length and is conducted by the Training Coordinator. The academy consists of CAD training, city geography, mapping, policy and procedure, and scenario-based training. Information not covered in the classroom is in the Training Manual. Since there are no full-time staff assigned to training, it is difficult for the Training Coordinators to keep the Training Manual updated and for this reason it has not been completely overhauled in five years. There is written testing throughout the classroom training.

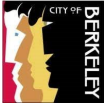
When classroom training is complete the trainee 'shadows' the call-taker position and starts to take calls with their CTO present to assist and take over if need be. The ECC receives more than 600 calls for service each day; there are many interruptions during the learning process for new recruits while they grapple with not only the technical precision and procedure required to perform the tasks, but also the enormity of responsibility that a 9-1-1 professional is tasked with. Very often new recruits come with little or no previous public safety communications training, education, or experience and their training is usually their first exposure to the profession, and it can be overwhelming. This phase is usually eight weeks in length.

The Communication Training Officer completes Daily Observation Reports (check-list template) and then provides a weekly Communications Training report to the trainee and the Training Coordinator. Once this phase is complete the new-hire will complete two weeks 'solo' in the Call-Taking position with continued monitoring and feedback by the on-shift Supervisor. Trainees who are quick to grasp and execute the Call-Taking position are accelerated and can move to the next phase earlier as deemed appropriate.

9.1.2.1 Dispatcher Training

Once call-taker training is completed, staff hired as Communications call-takers will move into Fire Dispatch Training or Records Desk. There is one two-week classroom portion followed by four weeks on the floor with the Communications Training Officer. This phase is completed after two weeks of solo operation. The final phase of Dispatch Training is for the Police Channel. The trainee returns to the classroom for two weeks and then completes eight weeks of shadow-based training on the floor with their CTO.





9.1.3 Supervisor Training

The state Supervisor training through POST is available for Supervisors and is required.

Communications Training Officers are voluntary and are required to receive POST CTO training. They are required to follow the training manual with a weekly guideline of what they should be covering. They utilize a daily observation report provided to the trainee and a weekly Communications Training Report provided to the Training Coordinator.

9.1.4 Continuing Education

At minimum, continuing education must include 24 hours of POST approved courses every two years for each employee, as mandated by the State POST program. Currently, staffing capacity does not permit scheduled training days for each employee. This makes it difficult to plan and attend training. However, as it is POST mandated, it must be attended to and almost always requires overtime to back fill staff who are sent for training.

9.1.5 Quality Assurance and Quality Improvement

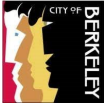
A comprehensive NENA/APCO quality assurance program was developed for the ECC. The program outlines that each employee will receive two call-taking evaluations, one police radio, and one fire radio evaluation every month. Evaluations are to be performed by the Supervisor or the Communications Manager and will be reviewed with the employee. There are evaluation forms to be utilized for each random review for each position.

Unfortunately, reviews are not being completed due to staffing shortages. Most staff indicated that they had never had a Quality Assurance review, nor had they ever had a Performance Review of any kind.

9.2 Recommendations - Training

FE recommends that Berkeley ECC create and implement a Training and Quality Assurance Coordinator position as soon as possible to plan, coordinate and support the recruitment and training of new personnel and develop and deliver a quality assurance and quality improvement (QA/QI) program for the ECC. This position will also endeavor to:





- Work in collaboration with BPD and Berkeley HR to update job descriptions to reflect specific job requirements, to highlight that candidates are 'paid while they train' and is posted in 'easy to find' online locations.
- Revamp the current recruit training manual classroom component to ensure the program is aligned with ECC operations. There must also be separate training for call-taking and dispatch positions. New employees should train in the call-taker position first and become proficient in that role with a required number of shifts, prior to moving into dispatch training. This will increase the opportunity for success for newly hired staff. It should include the following:
 - Focus on developing skill set and critical thinking.
 - Utilize activities and applied learning for familiarization with call-taking and dispatch, ECC technology and process
 - Scheduled sit-along, and a simulation lab that allows them to practice tasks in a non-live environment.
 - Classroom theory and simulation training should occur prior to the practical "at the desk" training component.
 - The implementation of simulation training has two goals:
 - Increase confidence and effectiveness through repeated practice, followed by immediate feedback, in a risk-free simulated environment
 - Decrease the length of overall training
- Create a designated training lab dedicated to the ECC and equipped with the furnishings and technology to support simulation-based training.
- Create rapid reference hyperlinks and guides to reduce memorization and excessive reading requirements.
- Include a recruit training practical component with an assigned coach/mentor who has been certified as a Communications Training Officer as per the standards outlined below.
- Update policy and procedures that include step by step process for job tasks in the ECC.
- Implement an employee wellness component that details how to access mental health supports.
- Develop and implement a formalized supervisor training program where potential supervisors are trained and mentored for the role well before they are promoted, and that continuous leadership development occurs throughout their tenure.



- Establish continuing education and professional development training that is treated as priority, and that efforts are made to regularly schedule training days (as soon as staffing levels permit).
- Ensure continued education and professional development be included in the program, and that ECC staff participate in joint training initiatives between fire, police, and the Center, including scenarios and table-top exercises for high acuity, low frequency incidents such as Active Assailant situations.

Ensure that the training program adheres to industry standards and any person creating or delivering training be certified to do so as per:

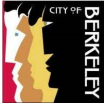
- NFPA 1225 (2022) Chapter 7: Public Safety Communications Training Officer (NFPA 1061) and Chapter 10: Public Safety Communications Training Coordinator (NFPA 1061)
- APCO ANS 3.108.2-2018 Core Competencies and Minimum Standards for Public Safety Communications Instructor
- APCO ANS 3.104.2-2017 Core Competencies and Minimum Standards for Public Safety Communications Training Coordinator; and
- APCO ANS 3.101.3-2017 Core Competencies and Minimum Standards for Public Safety Communications Training Officer (CTO)

9.3 Recommendations – Quality Assurance

The APCO/NENA standard recommends that Berkeley ECC review at least two percent of all calls for service, unless that number would be overly burdensome to an organization.

It is recommended that the QA/QI activities receive a higher priority, and that QA/QI reviews are consistently delivered using dedicated staff to oversee the program. **FE** recommends the Training and Quality Assurance Coordinator will provide oversight of the program, conduct the reviews, e.g., discussion with staff, document the findings of the reviews, and maintain the program. Once EMD (and EFD) is implemented, this position should receive training to become an Emergency Dispatch Quality Assurance Specialist (ED-Q) to prepare to effectively review EMD and EFD calls in accordance with IAED Standards.

While it may be necessary for one position to provide both training and QA/QI roles until staffing levels increase, the volume of QA & QI necessary, along with the training to support improvements for a staff of 50+ is significant. In particular, half of the staff in the ECC will be new and require more training and support in their initial few years, which will



stretch the capacity of having the roles combined. The long-term recommendation is to have one person fulfill the QA/QI role separate from the Training Coordinator position. The QA/QI Coordinator position can lead QA/QI program and support the Training Coordinator with the ECC Training Program. QA/QI and training roles are tightly interconnected; quality assurance data informs both training and quality improvement needs, training requirements inform quality assurance measurements and support improvements.

Additionally, succession planning for this position can be created through staff members who identify training and quality assurance as areas of strength or interest in their career path. They can also receive quality assurance and communications training officer certification, ED-Q and assist with supporting call review workload and other training projects, be mentored by Training and Quality Assurance Coordinator, and have the opportunity to fill in for this role when absence dictates.

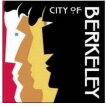
Alternatively, when EMD is implemented, this position could be filled by an experienced employee from another agency who is already certified and trained in EMD-Q. Hiring staff with prior experience in implementation and CAD integration would significantly expedite the development of the QA/QI program.

As an interim measure, EMD QA/QI support could be contracted to (Priority Dispatch) Quality Performance Review until staffing levels permit filling the role internally. With EMD outsourced, the Training and Quality Assurance Coordinator position would only be responsible for auditing Police and Fire calls.

Qualifications for this role and for creating a quality assurance, quality improvement, and training program can be informed by the following standards:

- NFPA 1225 (2022) Chapter 9 Public Safety Quality Assurance/Improvement Personnel (NFPA 1061)
- APCO/NENA ANS 1.107.1-2015 Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points
- APCO ANS 3.108.2-2018 Core Competencies and Minimum Standards for Public Safety Communications Instructor
- APCO ANS 3.106.2-2017 Core Competencies and Minimum Standards for Public Safety Communications Quality Assurance Evaluators
- APCO ANS 3.104.2-2017 Core Competencies and Minimum Standards for Public Safety Communications Training Coordinator





- APCO ANS 3.101.3-2017 Core Competencies and Minimum Standards for Public Safety Communications Training Officer (CTO)

A pathway to achieving an EMD and EFD Accredited Center of Excellence (ACE) certification is possible through:

- Standardized call-taking and dispatch protocol
- A well-designed QA/QI program with consistent call review and constructive feedback to staff
- Identifying and celebrating successes and high performance
- Identify trends and gaps in training
- The delivery of quality and regular training and professional development

Accreditation is highly attainable and sustainable once the ECC has the staffing, resources, and support to carry out the recommendations in this section and others.



10. Technology

10.1 *Computer Aided Dispatch*

Computer-aided dispatch (CAD) is a critical system that assists call-takers and dispatch personnel in processing, prioritizing, dispatching, and controlling calls for service for their respective emergency service agencies. CAD systems typically consist of several modules that provide call input, unit recommendations, call dispatching, call status maintenance, mapping, event notes/narrative, field unit status and tracking, and call resolution and disposition. Computer-aided dispatch systems also include interfaces that permit the software application to provide other critical features and functionality, such as links to external databases.

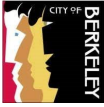
The ECC originally installed and went “live” with their Tyler Technologies CAD system in January 2009. The current software version is 2020.2, installed in February 2021. The ECC is using a virtual server environment, with a Windows Server 2019 server operating system, and the workstation operating system is Windows 10. They have a redundant back-up server configured with a backup in the cloud.

The system is capable of a multi-jurisdictional and multi-discipline configuration, but is currently only configured for a single municipality, the City of Berkeley. It is provisioned for a multi-discipline operation since the ECC dispatches both City Police and the City Fire services. The CAD system is configured and used to provide recommendations for both police and fire. The system uses CAD event numbers and agency specific incident numbers.

Tyler Technology is one of the largest CAD vendors on the market today. The Tyler CAD system has the capability to interface with one or more of the EMD software programs available. If Berkeley decides to adopt EMD, and chooses an EMD vendor, discussions with Tyler will need to be scheduled to discuss pricing and an implementation plan.

10.1.1 *CAD Discipline Modules*

The ECC operates with two CAD system modules, law enforcement and Fire/EMS. When a multi-discipline event is received and input, the software system generates two pending calls for service – one for law enforcement and one for fire. Most current CAD systems are capable of being configured as either two or three modules, but operationally, most communications centers are only configured for two. EMS units and associated functionality are built within the fire module. The only time it would be beneficial for three is when there are separate fire and EMS dispatchers and agencies and/or EMS is



dispatched by another communications center. In those cases when a multi-discipline event is generated, it could automatically spawn three CAD events, one for police, one for fire and the third for EMS.

10.1.2 CAD Interfaces

The following table lists typical interfaces found within public safety communications CAD systems and the status of those interfaces in the ECC's Tyler CAD system. The response 'Yes' indicates that the module exists, and the city is utilizing that interface or module. The interfaces or modules listed in the table with a 'No' response simply means the system is capable of the interface, but the city has elected not to buy or use that interface for operational or security reasons.

Table 24 - Berkeley Communications Center Interfaces

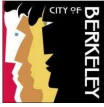
Berkeley Communications Center Interfaces			
CAD Interfaces	Yes/No	CAD Interfaces	Yes/No
9-1-1 ANI/ALI	Yes	Mobile Mapping	Yes
Alarm Monitoring	No	Phase 2 Wireless Mapping	Yes
Alarm Tracking and Billing	No	Police Field Reporting	Yes
ASAP Alarm Company	No	Police Mobile Data	Yes
Automatic Vehicle Location	Yes	Police RMS	Yes
Call-Taker/Dispatcher Mapping	Yes	ProQA (EMD software interface	No
Corrections Management Software	Yes	Radio Console: PT and Emergency	Yes
Logging Recorder	Yes	Rip & Run Printers	Yes
Email/Text Paging	Yes	Routing/Directions	Yes
Emergency Medical Dispatch (EMD)	Yes	Staffing Module	Yes
EMS Mobile	Yes	State/NCIC	Yes
EMS ePCR	Yes	TDD/TTY	No
Fire Mobile	Yes	Tone Alerting (radio voice paging)	No
Fire RMS	Yes	Pictometry	No
Fire Station Alerting	Yes	Web CAD	Yes
Master Clock	Yes		

10.2 Mapping/GIS

The ECC uses GIS/mapping data provided by the City's mapping, property information and GIS staff who are part of the Information Technology Department. The City GIS uses an Esri ArcGIS enterprise geodatabase solution, version 10.4. The Esri GIS data is imported for use with the Tyler CAD and mobile mapping systems.

The ECC's GIS data includes the required address points, street centerlines, administrative boundaries, and emergency response zones for the City. The GIS/mapping





data is updated monthly. The data is not limited to the city, so it does include some surrounding municipalities, but it does not include the entire County.

The ECC does have the required GIS data needed for NG9-1-1. This includes street centerlines, address points, administrative boundaries, and emergency services boundaries. The data meets local requirements, but it does not currently adhere to the NENA NG9-1-1 GIS Data Model⁸.

The ECC does have some limited data for their neighboring areas, and this is used for responses to mutual or supplemental aid areas outside the City.

10.3 *Mobile Data Devices*

The dispatch agencies use Mobile Data Devices to provide connectivity and communications with the computer aided dispatch system. MDD functionality includes the ability to provide silent dispatch (dispatched event data and notification), status changes, automatic vehicle location (AVL), directions, routing, messaging, and mobile mapping. For law enforcement it also provides field-based reporting functionality and the ability to query databases, such as CLETS/NCIC/RMS.

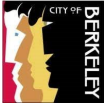
The city uses BMS/Data911 mobile data solution, integrated with the CAD application. The mobile solution was initially installed in February of 2012, and last updated in June of 2021 with version M8. The mobile server operating system is Windows and is located at the City Public Safety Building. The Fire Department is also using the same mobile data application; however, with a different user interface developed for fire operations. There are approximately 80 law enforcement and 40 fire/medical mobile computers in the field.

The connectivity from the mobile devices to the mobile server is achieved using Verizon and AT&T commercial wireless air cards. The city also uses NetMotion software which provides a secure mobile VPN connection and assists with traffic optimization by maintaining or resuming connectivity for the mobile devices in any areas with poor coverage.

The City is using a CAD/RMS integrated hand-held applications from Shield Force and Crew Force on an Apple iPad.

⁸ NENA-STA-006.1.1-2020





10.4 9-1-1 Answering Equipment

The ECC is the primary PSAP, therefore all 9-1-1 calls are routed directly to them by their 9-1-1 Service Provider. The ECC uses an Intrado Viper Call Handling Equipment (CHE) initially installed in 2017 and upgraded in 2019. The system will be due for upgrading in 2024.

Calls for police and fire services are processed by a call-taker who answers and then processes that event for dispatch. Calls that require a medical services response are transferred to ACRECC. All 9-1-1, ten-digit emergency and non-emergency lines are installed, configured, and answered on the Viper answering equipment.

The current Viper equipment is Phase II compliant, capable of rebids and can display a Wireless Phase II caller's location on the answering equipment's mapping system. The system is interfaced to the ECC's Eventide logging recorder. The 9-1-1 answering solution includes the ECaTS management information system (MIS) for telephone statistics.

The ECC has a web-based Text-to-9-1-1 solution provided by ComTech, that was implemented in February 2018. The City plans to replace this system with a new Rapid Deploy solution in the future.

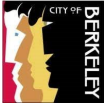
A CAD interface to the 9-1-1 answering equipment allows the transfer of ANI/ALI data for CAD event entry. The interface provides the display of Wireless Phase II data and the callers location on the CAD map. The city has seven 9-1-1 lines.

10.5 Logging Recorder

The Berkeley ECC uses an Eventide logging recording system to record the police talk groups and the telephone system. The recorder was originally installed in 2018. It has a 50+ channel capacity and currently records 20 radio channels and all the 9-1-1 answering positions. The recorder is under a support and maintenance contract through Capture Technologies. The recorder is capable of recording analog and digital conversations.

A NICE Inform recorder records all radio talk groups. The recorder is located at the primary radio site and owned by East Bay Regional Communications System (EBRCS). Access to the recorder is done remotely.





10.6 Emergency Notification System

The ECC uses an Everbridge AC Alert cloud-based emergency notification system. This is a stand-alone system and not interfaced to the 9-1-1 telephony system or the CAD system.

10.7 Emergency Dispatch Protocols

The ECC is not currently using any third-party emergency dispatch protocol software applications or flip cards.

10.8 Radio Dispatch Consoles

The City of Berkeley is a part of the East Bay Regional Communications System (EBRCS), a multi-site 700-800 trunked radio system provided by Motorola. The EBRCS is operated and maintained by the County of Alameda. It is not anticipated that there would need to be any changes as a result of these recommendations.

Table 25 - Primary Dispatch Talk Groups - Police

Berkeley Police Department Talk Groups	
Description	Dedicated Dispatcher
BPD 1	Yes
BPD 2	No
BPD 3-RB1	Yes
Parking Enforcement	No
BPD INV 1	No
BPD INV 2	No

BPD 1 is used as the primary operating radio channel among all police units. BPD 2 is used as the inquiry, information, and service radio channel for police units. If there is an incident that requires tactical dispatch (pursuit, cordon/perimeter work, etc.), that call will remain on Comm 1, and all other active calls will be instructed to move to BPD 2. Records queries are handled on BPD RB.

The following is a list of the primary talk groups or radio channels in use by the ECC for fire dispatch.



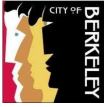


Table 26 - Primary Dispatch Talk Groups - Fire

Berkeley Fire Department Talk Groups	
Description	Dedicated Dispatcher
BER DSP 1	Yes
BER DSP 2	No
BER CMD 11	As needed
BER TAC 31	No
BER TAC 51	No
BER CMD 12	As needed
BER TAC 32	No
BER TAC 52	No
BER Emergency 16	No
BART 5A	No
BART 5B	No
Albany Fire Command and TAC	No
Other Allied Agencies, Channels, and Hospitals	No

BER DSP 1 is the talk group where units are dispatched and conduct their primary operational radio traffic. BER CMD 11 and CMD 12 are used as a command channel when required for major incidents such as structure related events, hazmat incidents, etc. TAC 31, TAC 51, TAC 32, and TAC 52 are for use on the fireground. All talk groups are managed by one communications operator who is dedicated to Fire Dispatch.

At times when there is a tactical incident that requires dedicated communications operator support, other communication operators on duty will assist with any other active fire calls.

10.8.1 Interoperability

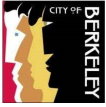
The ECC has radio interoperability via the EBRCS system to:

- All fire agencies in Alameda, Contra Costa, and some in Solano County
- 9-1-1 Ambulance Services in Alameda County
- Bay Area Rapid Transit (BART) for fire communications

10.9 Law Enforcement Records Management System (LERMS)

The law enforcement records management application provides functionality to manage data for incidents, cases, personnel, equipment, and other department actions. The system is interfaced to the CAD and mobile data system enabling data entered during event creation to be transferred to the appropriate LERMS incidents.





The LERMS module allows users to generate reports for crime analysis, management reports/presentations and retention. The system provides several pre-formatted reports or allows the agency to configure their own ad-hoc reports. The system tracks the investigation and case status.

The Berkeley PD uses Tyler Technologies New World Law Enforcement Records Management System (LERMS), installed in February 2009. The current software version is 2020.2. The system was last updated in February 2021, the server operating system is Windows Server 2019.

The law enforcement application provides functionality to manage data for incidents and cases. The system is interfaced to the CAD system, enabling data entered during event creation to be transferred or imported into the appropriate LERMS incidents.

BPD uses Tyler's field-based reporting module, and the system uses automated functionality to ensure accurate UCR reporting. The agency is currently working on migrating to NIBRS reporting. The law records module includes case management functionality for the tracking of cases from the time they are created until they are closed.

This module also provides the ability to input warnings or alerts on people entered as an officer safety feature.

10.10 Fire Records Management System (FRMS)

The Fire Records Management System is from Alpine Software, installed in April of 2009 and last updated in July of 2021. The system is running on a Windows Server 201 operating system.

10.11 Recommendations

FE recommends that:

- BFD and ECC implement a fully automated station alerting system for Fire/EMS dispatch integrated with CAD. This will create consistency, accuracy, and significant efficiencies in dispatching resources for fire and EMS incidents.
- Implement a two-way interface between Berkeley ECC and ACRECC to call share and receive medical call information and updates electronically in CAD, and subsequently, real time updates in Fire/EMS/Police MDTs for EMS calls.



11. Assuming Dispatching for Piedmont Fire

FE was asked to assess the City of Piedmont's fire dispatch operations for a possible consolidation with the City of Berkeley Communications Center (ECC). **FE**'s project team benchmarked current conditions, documented operational requirements, identified, and evaluated operational enhancements, and recommended how the Cities of Piedmont and Berkeley should proceed regarding consolidation.

FE spent time in March 2022 in the City of Piedmont touring facilities and interviewing stakeholders of the City of Piedmont Emergency Communications Center (PECC). Prior to and after the site visit, **FE** was in contact with personnel from PECC, the Piedmont Police Department (PPD) and the Piedmont Fire Department (PFD), gathering information.

11.1 City of Piedmont

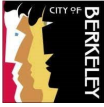
The City of Piedmont encompasses an area of 1.7 square miles in Alameda County. The U.S. Census reports that the population in 2020 was a total of 11,270 residents⁹. The City of Piedmont is bordered on all sides by the City of Oakland and has no contiguous boundaries with the City of Berkeley.



11.2 City of Piedmont Fire Department

The PFD has responsibility for fire and emergency medical services for the City of Piedmont. The PFD has one fire station and currently staffs seven line fire fighters per day aboard one engine, one truck and an ambulance. The average call volume is just over 1,000 calls per year. Piedmont Fire is a participant in the California Master Mutual Aid program and regularly deploys resources across the state during wildland fire season and other large-scale emergencies.

⁹ United States Census Bureau, <https://www.census.gov/quickfacts/piedmontcitycalifornia>



11.3 City of Piedmont Emergency Communications Center

The PECC is located within the PPD Headquarters at 120 Vista Avenue. The ECC operates under the umbrella of the Support Services Division of the PPD.

The Center currently dispatches all law enforcement, fire, and emergency medical service requests, although Alameda County Regional Emergency Communications Center (ACRECC) currently supports the City of Piedmont by providing Emergency Medical Dispatching (EMD) for all requests for medical assistance.

PECC, at the time of the on-site observations, had five dispatchers and a Support Services Commander, in charge of PECC operations. This is the authorized staffing of full time equivalent (FTEs) and is the bare minimum number of personnel required to staff the Center 24x7x365. The number of FTEs has not changed in over 20 years. The Center last held a hiring process more than three years ago. The most experienced dispatcher has over 20 years tenure, the least experienced dispatcher has over 3 years tenure, with an average tenure of the dispatch staff of 13 years.

11.4 Current Workload – City of Piedmont

Determining workload is a combination of telephone call volume, operational and technological challenges, and non-emergency job tasks.

11.4.1 Telephone

In 2021, PECC received 1,723 9-1-1 calls and 15,476 administrative calls for a total of 17,199 incoming calls, with a total of 378 calls that were abandoned before they could be answered. The Center made 7,122 outgoing calls during the year. Unfortunately, telephone traffic cannot be broken out between law and fire/EMS calls, but statistical trends can be indicative of workload increases at the City of Berkeley.

11.4.2 Total Calls by Year

Call volume for the City of Piedmont dropped 6% from 2016 to 2020. While 2020's drop can be attributed to COVID, there was a steady drop in the previous 4 years. The year 2021 shows a 13% increase over 2020, and it would be anticipated that call volumes will meet and exceed 2016 totals in the next year or two.



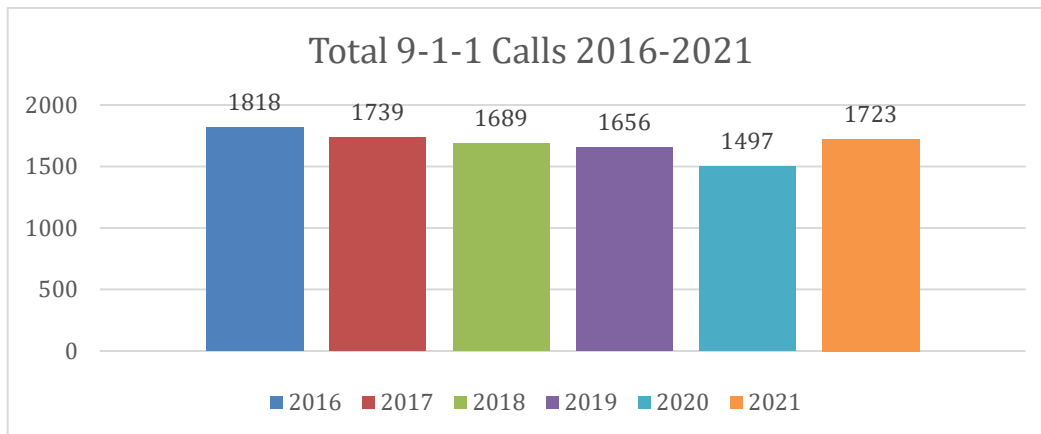


Figure 6 - Piedmont Calls by Month

11.4.3 *Calls by Day of Week*

The 9-1-1 calls are fairly consistent over the week, with little variation. It is interesting to note that 9-1-1 calls in 2020 were consistent with previous years.

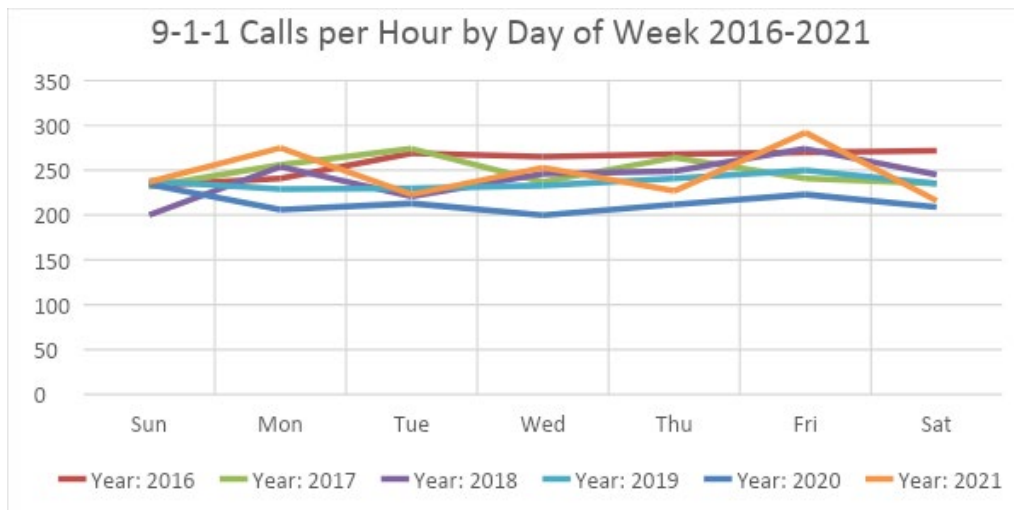


Figure 7 - Piedmont Calls by Day of Week 2016 – 2021

11.4.4 *Calls by Hour of Day*

Piedmont 9-1-1 calls are highest around 1600 hours, although that varies by year from 1400-1600 hours.

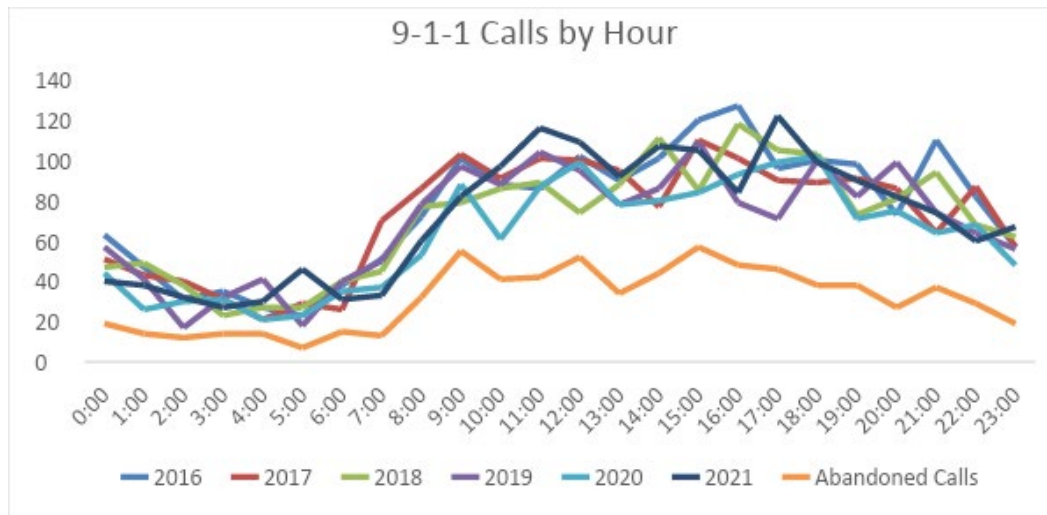


Figure 8 - Piedmont Calls by Hour of Day 2016 – 2021

11.5 Staffing at the City of Piedmont Communications Center

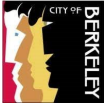
PECC has five full-time dispatchers, and minimum staffing is one dispatcher. Several PPD officers are trained to cover full shifts and restroom breaks as needed.

11.6 Current Dispatching Process

Upon answering a 9-1-1 call, the dispatcher gets the basic information – location, type of event, and caller's contact information. The dispatcher inputs the information into the computer-aided dispatch (CAD) system (vendor is Tyler Technologies – formerly New World and the same vendor as the City of Berkeley). There are 40 fire/EMS event types:

Table 27 - Piedmont Fire CAD Event Types

Piedmont Fire CAD Event Types			
Code	Description	Code	Text
245	Assault w/ Deadly Weapon	AA	Service Agency Assist
AUTOAID	Automatic Aid	BART	Bart Fire
BOAT-FR	Boat Fire	DBF	Dead Body Found
DEBFIRE	Debris Fire	ENCAMP-FIRE	Encampment Fire
ENCAMP-MED	Encampment Medical	FA-CO	Carbon Monoxide Alarm
FA-COM	Commercial Fire Alarm	FA-RES	Residential Fire Alarm
FA-RST	Fire Alarm Reset	FREEWAY	Vehicle Accident on Freeway
FREEWAY-EX	Vehicle Accident on Freeway w/Extrication	GASLEAK	Gas Leak
HAZMAT	Hazardous Material	HC	Hazardous Condition



Piedmont Fire CAD Event Types			
Code	Description	Code	Text
INV	Investigation	MCI	Multi-Casualty Incident
MED2	5150 Transport	MEDICAL	Medical Emergency
MEDICAL-GSW	Medical Emergency with Gun Shot	MRA	Mutual Response Area
MUTAID	Mutual Aid Fire	MUTMED	Mutual Aid Medical
PA	Public Assist	RES-ELEV	Elevator Rescue
RES-WR	Water Rescue	RESCUE	Retrieval of a Patient
SB-LAW	Stand By Police Agency	STRFIRE	Structure Fire
TRKFIRE	Large Truck Fire	VEGFIRE	Vegetation Fire
VEHACC	Vehicle Accident	VEHACC-EX	Vehicle Accident w/Extrication
VEFIRE	Vehicle Fire	VEHPED	Vehicle vs Ped or Bike

Once entered into CAD, units are recommended for dispatch based on pre-determined response plans. Fire units are notified by fire station alerting and all units are notified by radio. The fire station alerting system uses the Motorola radio system and provides notification via public address speakers in the station.

All front-line vehicles are running Crew Force software on iPads that allow personnel to record status changes (enroute, arrival, etc.) and see incident information. Incident data is transferred to the Tyler RMS for use by PFD.

11.7 Current Interactions with Other Agencies

11.7.1 Alameda County Regional Emergency Communications Center (ACRECC)

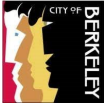
ACRECC is the designated Emergency Medical Dispatch (EMD) provider for the County of Alameda, and they are also the ECC for the private ambulance company that provides ALS transport for much of the county. The Center transfers all medical aid calls to ACRECC for EMD, and on occasion will request a private ambulance in support of the fire department.

ACRECC is also the California Office of Emergency Services Fire and Rescue Division Mutual Aid Operational Area Coordinator. Requests for mutual aid are routed through ACRECC and allocated to the individual fire agencies.

11.7.2 City of Oakland

The City of Piedmont is surrounded by the City of Oakland, and PFD requires automatic aid from Oakland Fire Department (OFD) on all major events.





11.8 Policy Manual Review

The PFD Policy Manual (Communications Operations) has a total of 17 policies related to Communications and covers basic operational issues.

11.9 Training Manual Review

There is no formal fire training program for new employees.

11.10 Operational Considerations for Integrating PFD Dispatch

11.10.1 Telephone Systems

Non-emergency phone numbers for PFD will remain with the City of Piedmont. There is no 10-digit number assigned for fire department emergencies.

The City of Piedmont has three 9-1-1 trunks, and with the low volume of fire/EMS related 9-1-1 calls it does not appear that Berkeley will need to add any additional 9-1-1 trunk appearances, nor will PECC lose any 9-1-1 trunks. (Next Generation 9-1-1 will eliminate the need for specific CAMA trunks to each PSAP so this will be a moot point in the near future.) Wireless 9-1-1 calls within the footprint of the City of Piedmont will continue to route to PECC.

It is important to note that having the City of Berkeley dispatch for PFD will add a delay in the call processing time, since PPD will have to transfer all fire and EMS calls to the Berkeley ECC for dispatch. The transfer time will depend on many factors, primarily the ability of the caller to answer questions, but should not take more than 30 seconds¹⁰.

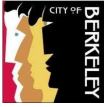
Speed dials built into the 9-1-1 system will need to be updated to reflect the Berkeley FD star code for PFD calls. This is a task completed by AT&T.

11.10.2 Radio

Both Piedmont and Berkeley are on the East Bay Regional Communications System (EBRCS) and no significant radio changes are anticipated.

¹⁰ National Fire Protection Association 1225 Standard for Emergency Services Communications, 2022 Edition, Section 15.4.2



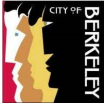


11.10.3 CAD

Both Piedmont and Berkeley use Tyler Technologies Enterprise Public Safety CAD system. Configuring the CAD system in Berkeley will be the most time-consuming effort of the move. There will need to be discussions with Tyler on the transfer of the following data elements:

- GIS Map with associated street
 - Response Zone polygons
 - Any other map layers on the current system - i.e., pre-fire plans, hydrant layers, etc.
- Historical Fire Events, from the installation of the Tyler CAD system
- Common Place Names
- Special Notes
- Unit IDs and attributes
- Response Plans
- Interfaces
 - RMS - PFD is currently using the Tyler Records Management System. Berkeley Fire uses RedNMX by Alpine Software with the Red Alert National Fire Incident Reporting System (NFIRS) Reporting Module. Piedmont would need to be added to the RedNMX configuration, and there will need to be a discussion on how to manage records from the old system prior to cutover.
- EMS e-PCR - PFD uses ESO as their e-PCR program. The program gets a data feed from CAD for times, and it does not feed back into their RMS.
- Fire Station Alerting - PFD has a patched-together system that routes through a Motorola radio and transmits all PFD radio traffic across speakers in the station. Berkeley uses a ComTech solution.
- Rip and Run Printers - PFD stopped using a station printer when they added MDCs to their vehicles.
- Mobile Paging - CAD feeds data to the Active9-1-1 application and all personnel have access.
- Mobile Data Computers (MDC) - Both Piedmont and Berkeley field units use the Tyler Technology MDC software platform called CrewForce. The system allows field units to receive information from CAD on events and allows them to enter





events they have come upon. Piedmont is using Apple iPads, where Berkeley is using a Data9-1-1 laptop.

11.10.4 Emergency Notification System

Berkeley and Piedmont both use Everbridge AC Alert, so it should not be difficult to incorporate Piedmont configurations into Berkeley's profile.

11.11 Training

A training plan will need to be created if PFD is going to be integrated into the Berkeley ECC, covering the following areas:

- Area Familiarization - landmarks, common place names, etc.
- Station Familiarization - equipment at the PFD station and their field operations capabilities
- Response plans - typical responses to event types, interaction with the City of Oakland

11.12 PFD/BFD Dispatch Policies

These policies will need to be reviewed, looking for differences with Berkeley policies and how both policies can be modified to provide the dispatcher one set of procedures for both agencies.

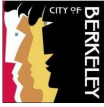
11.13 Consolidation Cost Considerations

Bringing in Piedmont's fire dispatching operations will have an associated cost to the City of Berkeley. Below are the anticipated areas for consideration:

Adding the City to Berkeley's dispatch IT infrastructure for MDTs, RMS, and Fire Station Alerting

This would be staff time (hourly cost) for IT professionals to acquire, install, maintain, and trouble shoot as needed the hardware (Ringdown System – Comtech, MDC's, related accessories) and all associated software. Initial upfront costs then ongoing maintenance costs.





Reprogramming of portable and mobile radios on the radio system (EBRCS)

This would be staff time (hourly cost) for the Radio Shop techs to reprogram all their radios and ensure maintenance and updates are completed. Up front startup costs then ongoing maintenance.

Adding the Piedmont streets to Berkeley's GIS mapping

This will be staff time (hourly cost) to update GIS software to include Piedmont. Up front and maintenance costs to be included.

Adding the PFD units, special notes, and other CAD information to Berkeley's CAD system

This will be staff time for dispatcher and IT professionals (hourly cost). Up front and maintenance cost to be included.

Adding the City of Piedmont to the Everbridge Mass Notification System

This will be staff time for dispatcher and IT professionals (hourly cost). Up front and maintenance cost to be included.

Adding the PFD's policies and procedures to Berkeley's standard operating guidelines and training manual

This will be staff time for dispatchers (hourly cost). Up front and maintenance cost to be included.

Training Berkeley dispatchers – area familiarity, PFD procedures, PFD units, etc.

Overtime staff cost for dispatchers, fire personnel, and IT professionals. Up front and maintenance cost to be included.

11.14 Recommendation

FE recommends that the addition of PFD to Berkeley ECC should be completed after the implementation and a break-in period of EMD in Berkeley if that is the decision made by Berkeley. Piedmont did indicate that Berkeley taking on EMD was not a pre-requisite for them making the transition.



12. Berkeley Assuming Dispatching for Albany Fire

FE was asked to assess the City of Albany's fire dispatch operations for a possible consolidation with the City of Berkeley Communications Center (ECC). **FE** project team benchmarked current conditions, documented operational requirements, identified, and evaluated operational enhancements, and recommended how the Cities of Albany and Berkeley should proceed regarding consolidation.

FE spent time in May 2022 in the City of Albany touring the facilities and interviewing the Albany Fire Chief. Prior to and after the site visit, **FE** was in contact with the City gathering information.

12.1 City of Albany

The City of Albany encompasses an area of 1.79 square miles of land in Alameda County. The U.S. Census reports that the population in 2020 was a total of 20,271 residents¹¹. The City of Albany is bordered on the south and east by the City of Berkeley, on the west by the San Francisco Bay, and on the north by Contra Costa County.



12.2 City of Albany Fire Department (AFD)

The AFD has responsibility for fire and emergency medical services for the City of Albany. The AFD has one fire station and currently staffs 20 firefighters. First out apparatus includes one engine, one truck and an ambulance. The average call volume is 1,950 calls per year. AFD is a participant in the California Master Mutual Aid program and has deployed resources across the state during wildland fire season and other large-scale emergencies.

In considering a move to the City of Berkeley ECC, the AFD has the following needs:

- Dispatchers who are trained in fire department terminology, Incident Command System (ICS), and can anticipate the Incident Commander's needs - additional resources, timers, etc.

¹¹ United States Census Bureau, <https://www.census.gov/quickfacts/albanycitycalifornia>

- Radio dispatchers focused on the field operations and not distracted by other tasks
- A stable, experienced workforce
- Supervision on the dispatch floor and immediately accessible for direction/questions
- A minimum of two dispatchers on duty at all times
- Direct contact with Emergency Medical Dispatchers who can provide timely updates on patient condition and status

12.3 *City of Albany Emergency Communications Center (AECC)*

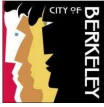
AFD started out having their own fire dispatch. Staffing was one of the on-duty firefighters who was assigned to staff the dispatch desk. AFD dispatch moved to the AECC in 1994-1995. The AECC is located within the Albany Police Department (APD) Headquarters at 1000 San Pablo Avenue. The AECC operates under the umbrella of the Support Services Division of the Albany Police Department (APD) and the dispatchers report to an APD sergeant. Funding for AECC is in the APD budget only – there is no budget line item in the AFD budget.

The Center currently dispatches all law enforcement, fire, and emergency medical service requests for the City of Albany. All requests for medical assistance are transferred (after basic call interrogation and the dispatch of AFD) to the Alameda County Regional Emergency Communications Center (ACRECC) to provide Emergency Medical Dispatch (EMD) pre-arrival assistance.

12.3.1 *Staffing at the AECC*

AECC has an authorized staffing of eight dispatchers. At the time of the on-site observations there were six dispatchers and one trainee, with one vacancy. Dispatchers are currently working 12-hour shifts, 0600-1800 and 1800-0600 hours. There are two people assigned to a swing shift, working 0900-2100 hours. Minimum staffing is one person. APD officers will cover for dispatcher breaks.

If no one is taking scheduled time off, there is one person on duty from 0600-0900 hours, two people from 0900-2100 hours, and one person again from 2100-0600 hours. Shifts are bid every 18 months by seniority.



12.3.2 Current Workload

Determining workload is a combination of telephone call volume, operational and technological challenges, and non-emergency job tasks. With a consolidated communications center, some statistics are by default a combination of all requests for service – law, fire, and EMS.

As a combined law/fire/medical communications center, AECC cannot differentiate incoming calls by discipline. The table below reflects all incoming calls:

Table 28 - AECC Incoming Calls

AECC Incoming Calls							
Albany	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Calls Ans =<15 secs.	87.76%	87.19%	87.62%	84.79%	86.63%	85.22%	85.70%
Avg. Calls/Hour	2.5	3.9	4.2	3.6	3.7	3.6	2.7
Avg. Busy Hour	1400	0900/1400	1100	1100/1300	1400	1300	1300

As shown in the table above, the busiest day of the week is Tuesday, and the busiest hour of the day is 1100 to 1200 hours. AECC comes close but does not meet the NFPA¹² or NENA¹³ criteria for call answer compliance of 15 seconds or less 90% of the time. There are several factors that can affect the workload in a dispatch center:

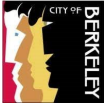
- AECC answers all administrative phone lines for the City.
- Dispatch staffs the public counter, handling citizen walkups for all City services. There is a bullet-resistant plastic window between the public and the dispatch room.
- Dispatchers also handle records maintenance for the APD.

All of these other duties detract from the dispatcher's ability to focus on their primary job. This, added to the times when there is just one dispatcher on duty, impacts call answer compliance. There are times when field units have been asked to repeat traffic, which indicates that the dispatcher is performing multiple tasks (radio and telephone) at the same time.

¹² National Fire Protection Association 1225, *Standard for Emergency Services Communications*, 2022 Edition, Section 15.4.1

¹³ National Emergency Number Association *Standard for 9-1-1 Call Processing*, NENA STA-020.1-2020





12.3.3 Fire Incidents

Fire Events - All 9-1-1 calls for fire and EMS come first to AECC. Dispatched calls for AFD are averaging 1,954 per year over the past 5 years. The NFPA standard for call processing of fire emergency events is ≤ 60 seconds 90 percent of the time¹⁴.

As shown in the following table, AECC does not meet that standard.

Table 29 - Albany Call Processing Times

Albany Call Processing Times – 2017 - 2021						
Call Processing	2017	2018	2019	2020	2021	Average
≤ 60 seconds	130	116	105	185	393	186
> 60 seconds	1,884	1,773	1,937	1,441	1,480	1,703
Outliers/No Data	83	50	82	50	59	65
Total Calls	2,097	1,939	2,124	1,676	1,932	1,954
% ≤ 60 seconds	6.20%	5.98%	4.94%	11.04%	20.34%	9.52%

12.4 Current Dispatching Process

Upon answering a 9-1-1 call, the dispatcher gets the basic information – location, type of event, and caller's contact information. The dispatcher inputs the information into the computer-aided dispatch (CAD) system (vendor is Sun Ridge Systems Inc. RIMS CAD) There are 19 fire/EMS event types:

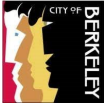
Table 30 - Albany CAD Call Types

Albany CAD Call Types			
CAD Event Type	Description	CAD Event Type	Description
FDAMBRUN	Ambulance Run – Medical	FDLCKOUT	Lockout
FDCADERR	CAD Error	FDMDALRM	Medical Alarm
FDCVD	Station Coverage	FDPBAST	Public Assist
FD FIRECR	Car Fire	FDPDASST	PD Assist
FD FIREGR	Grass Fire	FDRESCUE	Rescue
FD FIREERBB	Rubbish Fire	FDSMOKE	Smoke Investigation
FD FIREST	Structure Fire	FDWIRDWN	Wires Down
FD FRALRM	Fire Alarm	FDWTLEAK	Water Leak
FD HAZARD	Hazardous Condition	FDWTRESQ	Water Rescue
FD HAZMAT	Hazardous Material		

Once the dispatcher enters this information into CAD, units are recommended for dispatch based on pre-determined response plans. Fire units are notified by fire station

¹⁴ National Fire Protection Association 1225, *Standard for Emergency Services Communications*, 2022 Edition, Section 15.4.4





alerting and all units are notified by radio. The fire station alerting system uses the Motorola radio system and provides notification via public address speakers in the station.

12.5 *Current Interactions with Other Agencies*

12.5.1 *Alameda County Regional Emergency Communications Center (ACRECC)*

ACRECC is the designated Emergency Medical Dispatch (EMD) provider for the County of Alameda, and they are also the dispatch center for the private ambulance company that provides ALS transport for much of the county. The Center transfers all medical aid calls to ACRECC for EMD, and on occasion will request a private ambulance in support of the fire department.

ACRECC is also the California Office of Emergency Services Fire and Rescue Division Mutual Aid Operational Area Coordinator. Requests for mutual aid are routed through ACRECC and allocated to the individual fire agencies.

12.5.2 *City of Berkeley*

The City of Albany is bordered on two sides by the City of Berkeley, and AFD requires automatic aid from the Berkeley Fire Department (BFD) on all major events.

12.6 *Policy Manual Review*

FE was unable to obtain a copy of any policy manual or standard operating guidelines.

12.7 *Training Manual Review*

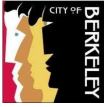
FE was unable to obtain a copy of any training manual or standard operating guidelines. AFD reports that there is no formal fire training program for new employees.

12.8 *Operational Considerations for Integrating AFD Dispatch*

12.8.1 *Telephone Systems*

Non-emergency phone numbers for AFD will remain with the City of Albany. There is no 10-digit number assigned for fire department emergencies.





With the low volume of fire/EMS related 9-1-1 calls it does not appear that Berkeley will need to add any additional 9-1-1 trunk appearances, nor will AECC lose any 9-1-1 trunks. (Next Generation 9-1-1 will eliminate the need for specific CAMA trunks to each PSAP so this will be a moot point in the near future.) Wireless 9-1-1 calls within the footprint of the City of Albany will continue to route to AECC.

It is important to note that having the City of Berkeley dispatch for AFD will add a delay in the call processing time, since AECC will have to transfer all fire and EMS calls to the Berkeley ECC for dispatch. The transfer time will depend on many factors, primarily the ability of the caller to answer questions, but by NFPA standards, should not take more than 30 seconds¹⁵.

Speed dials built into the 9-1-1 system will need to be updated to reflect the Berkeley FD star code for AFD calls. This is a task completed by AT&T.

12.8.2 *Radio*

Both Albany and Berkeley are on the East Bay Regional Communications System (EBRCS) and no significant radio changes are anticipated.

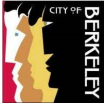
12.8.3 *CAD*

Albany is using a Sun Ridge Systems Inc. RIMS CAD system. Key features of the system are:

- Station run card-based unit recommendations or unit recommendation based on GPS (proximity based)
- Multiple alarm unit recommendation to six alarms
- Ability to store Premise information - including PDFs of Pre-Fire plans - available from dispatch or the mobile
- Units can be "paired" to another unit - so that if one unit is dispatched or changes status, the same occurs to the other unit (e.g., Grass unit responds with Engine)
- Units can respond as other types of units (e.g., An Engine can also respond as a Truck)

¹⁵ National Fire Protection Association 1225 Standard for Emergency Services Communications, 2022 Edition, Section 15.4.2





- Units can be cross-staffed - so that if that unit is dispatched, it will take the other associated units and put them out of service - essentially putting the station out of service
- Incidents can be duplicated from Law to Fire or Fire to Law. Comments can be added from the command line to Law, Fire, or both
- Agency specified incident types automatically create both law and fire/EMS incidents simultaneously

12.8.4 *Interfaces*

CAD to CAD Interface with UC Berkeley PD – UC Village, also called University Village or University Village Albany, is a housing community for students who are married or have dependents. It is owned and administered by the University of California, Berkeley and located within the City of Albany. UC Berkeley PD dispatch utilizes Alliance PD Central® CAD from Cyrun.

12.8.5 *Fire Station Alerting*

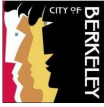
Fire station alerting is a system created by AFD. The system activates the in-station public address system and nothing else.

12.8.6 *Mobile Data Computers (MDC)*

Albany utilizes the Sun Ridge Systems Mobile RIMS for Fire and EMS. Utilizing a connection via TCP/IP or Data radio, this software allows field users to:

- View CAD Incidents and the ability to respond, change unit status, add comments to Incidents
- View other AFD Fire and Medic units on Mobile Maps
- Retrieve location history for Incidents
- View Premise Information - Including photographs and attachments (e.g., PDFs - "Pre-Fire Plans")
- Change Fire Station Assignment
- Create CAD Incidents from the Field
- View a Phone Directory
- Retrieve Street/Block Information





- Send RIMS Mail Messages to Other Mobile Units and Office Computers (Including Communications)
- Send Text Messages

12.8.7 *Automated Vehicle Location (AVL)*

Mobile RIMS supports Automated Vehicle Location (AVL) features that include:

- Unit AVL display in RIMS In-Station and Mobile Maps
- Unit playback using RIMS Map
- Geo-Fence options

12.8.8 *Paging*

RIMS CAD employs RIMS2Text, allowing dispatchers to quickly alert and manage personnel notifications.

12.8.9 *Emergency Notification System*

Berkeley and Albany both use Everbridge AC Alert, so it should not be difficult to incorporate Albany configurations into Berkeley's profile.

12.8.10 *Training*

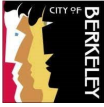
A training plan will need to be created if AFD is going to be integrated into the Berkeley ECC, covering the following areas:

- Area Familiarization - landmarks, common place names, etc.
- Station Familiarization - equipment at the PFD station and their field operations capabilities
- Response plans - typical responses to event types, interaction with the City of Oakland

12.8.11 *Emergency Medical Dispatch (EMD)*

Currently, EMD is done by the Alameda County Regional Emergency Communications Center (ACRECC). Calls requesting medical assistance are dispatched by AECB based on a chief complaint (i.e., heart attack). The caller is then transferred to ACRECC for them





to complete the EMD process. AECC receives the EMD determinant and patient status through a data feed provided by IT services provider DNI. Because of the short response times, AFD would like EMD to be completed in-house to ensure patient care is happening as quickly as possible.

12.8.12 AFD/BFD Dispatch Policies

Policies from AFD and AECC will need to be reviewed, looking for differences with Berkeley policies and how both policies can be modified to provide the dispatcher one set of procedures for both agencies.

12.9 Consolidation Costs

Bringing Albany's fire dispatching operations into the Berkeley ECC will have some associated cost to the City of Berkeley. Some will be hard costs to third party vendors, but many will be soft costs – items that will take staff hours to complete. Below are the anticipated areas with these hard and soft costs:

Configuring the Tyler CAD System with Albany information

Configuring CAD will be the most time-consuming effort of the move. There will need to be discussions with Sun Ridge Systems and Tyler on the transfer of the following data elements:

- GIS Map with associated street attributes
 - Response Zone polygons
 - Any other map layers on the current system - i.e., pre-fire plans, hydrant layers, etc.
- Historical Fire Events, from the installation of the RIMS CAD system
- Common Place Names
- Special Notes
- Unit IDs and attributes
- Response Plans
- Interfaces
 - RMS - AFD is currently receiving a data download to ESO. Berkeley Fire uses RedNMX by Alpine Software with the Red Alert NFIRS Reporting Module. Albany would need to be added to the RedNMX configuration, and there will



need to be a discussion on how to manage records from the old system prior to cutover.

- EMS e-PCR - AFD also uses ESO as their e-PCR program. The program gets a data feed from CAD for times, and it does not feed back into their RMS.
- Fire Station Alerting - AFD has a custom relay configuration to activate the public address system and nothing else. Berkeley is using a ComTech solution.
- Mobile Paging - CAD feeds data to the Active9-1-1 application and all personnel have access.
- Mobile Data Computers (MDC) - Berkeley field units use the Tyler Technology MDC software platform called CrewForce. The system allows field units to receive information from CAD on events and allows them to enter events they have come upon. Albany is using Mobile RIMS.

Adding Albany to Berkeley's Dispatch IT infrastructure for MDCs, RMS, and Fire Station Alerting

This would be time and materials for IT professionals to acquire, install, maintain, trouble shoot as needed the hardware (Ringdown System – Comtech, MDC's, related accessories) and all the software. Initial upfront costs then ongoing maintenance costs.

Reprogramming of portable and mobile radios on the radio system (EBRCS)

This would be staff time (hourly cost) for the Radio Shop techs to reprogram all their radios and ensure maintenance and updates are completed. Up front startup costs then ongoing maintenance.

Adding the Albany streets to Berkeley's GIS mapping

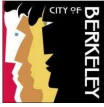
This will be staff time (hourly cost) to update GIS data to include Albany. Up front and maintenance costs to be included.

Adding the AFD units, special notes, and other CAD information to Berkeley's CAD system

This will be staff time for dispatcher and IT professionals (hourly cost). Up front and maintenance cost to be included.

Adding the City of Albany to the Everbridge Mass Notification System

This will be staff time for dispatcher and IT professionals (hourly cost). Up front and maintenance cost to be included.



Adding AFD's dispatch policies and procedures to Berkeley's Standard operating guidelines and training manual

This will be staff time for dispatchers (hourly cost). Up front and maintenance cost to be included.

Training Berkeley dispatchers – area familiarity, PFD procedures, PFD units, etc.

Overtime staff cost for dispatchers, fire personnel, and IT professionals.

12.10 Recommendation

FE recommends the addition of AFD to the Berkeley ECC, but only after the implementation and a break-in period of EMD. Albany did indicate that Berkeley taking on EMD was not a pre-requisite for them to make the transition.



13. Funding Model

The following is a high-level financial analysis and projected cost estimates for the ECC recommendations included in this report. FE recommends that Berkeley organize a project task force team immediately to carry out the strategic plan to address the immediate critical needs.

Table 31 - Financial Analysis & Projected Costs Estimates

Financial Analysis & Projected Costs Estimates for ECC				
Category	Term	Comments	One-Time Up-Front Cost Estimate	Three Year Cost
Staffing	Short	In order to implement EMD, an increase of 26 employees is required; cost estimate based on average salary plus benefits & admin support	\$3M	\$9M
Training	Short	Expand/Augment current training program by adopting industry available entry level (basic) for new recruits. The adoption of a core competencies in an on-demand / on-line training format reduces basic introductory in-house training.	\$15K	\$45K
		CTO training targeting new and seasoned instructors including presentation skills, adult learning styles, human relations. Note that this effort does not include wages, time off, or special compensation germane to the delivery and participation in ECC personnel training.	\$25K	\$25K
		Supervisory training geared specifically to ECC supervisors that is ECC specific. This training to include human relations, negotiation skills, intervention, skills, QA/QI methodologies, etc.	\$25K	\$25K
Protocol Implementation	Short	Implementing structured protocols for Emergency Medical Dispatch; includes costs for QA/QI system software.	\$200K	\$20K
Technology	Medium	Conversion of existing workspace to create a dedicated training facility complete with operational workstations configured to augment spikes in ECC call processing.	\$500K	TBD
		Design and implementation of CAD-to-CAD Interface with UC Berkeley PD.	\$250K	\$25K
Accreditation	Medium	Pursue ECC accreditation following the successful implementation of EMD.	\$3K	\$3K

14. High Level Implementation Plan

In this section, we offer a high-level strategic implementation plan; a roadmap that identifies and prioritizes the next best steps for the ECC and its leadership. We have created the strategic implementation plan below which includes area of focus, criticality/priority, followed by a recommended plan of action.

FE recommends that Berkeley create a project team who would be responsible for implementing the recommended steps and strategies. Without staff dedicated to moving forward quickly on the high priority items, it will be difficult to address critical items in a timely manner. This creates additional strain on already low and heavily impacted staffing levels in the ECC, and additional risk in operations.

Staffing is the principal priority that must be addressed immediately in the Berkeley ECC. Staffing recommendations include increases from the current authorized 33 positions, to 53 positions total (with turnover factored in).

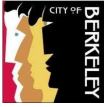
Today, there are only 27 positions of the 33 positions that are staffed. The ECC will require an additional 26 Public Safety Dispatchers to meet the minimum staffing recommendations to support current call volume and workload. These figures only include the required frontline positions to achieve minimum staffing in the ECC and do not include any additional staffing increase recommendations for training, quality assurance, accreditation and IT and administrative support. Those recommendations can be found in their respective sections in the report.

Further, while staffing is the priority, there are other areas for improvement, consideration, and implementation that will need to be managed in parallel to a staffing increase, to support the ECC in its immediate and long-term success.

Below is a high-level implementation plan outlining the areas of focus and priority, along with additional information and next steps for the Berkeley ECC and its leadership.

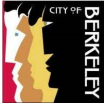
Table 32 - High-Level Implementation Plan

High-Level Implementation Plan		
Area of Focus	Priority	Strategy
Staffing	1	<ul style="list-style-type: none">Increase Overall Staffing: A total number of 53 ECC employees with turnover factored in. This is necessary to achieve sustainable operations and meet industry performance standards. Today, ECC is authorized for 33 employees, and 27 of these positions are filled. An overall increase of 26 employees is required.



High-Level Implementation Plan		
Area of Focus	Priority	Strategy
		<ul style="list-style-type: none">Establish Minimum and Optimum Staffing Levels: A minimum staffing complement of eight employees on duty, and a maximum staffing complement of ten employees on duty per shift in the ECC.Work toward implementing staffing recommendations without delay.
Recruiting Process	1	<ul style="list-style-type: none">Recruiting process must be acceleratedShorten process for entry level applicantsIncentivized recruiting program in order to attract qualified candidates. This includes the review of wages, hiring incentives, etc. This will ensure competitiveness in the market.Recruit both lateral experienced candidates along with entry level attracting qualified and experienced candidates.
Facility	1	<ul style="list-style-type: none">Expand/redesign ECC to accommodate an increase the number of workstations from 8 to 15Create a backup site that doubles as a Training Facility and/or Emergency Operations CenterCreate a fully functional training room with workstations and ECC technology – CAD, phone, radio.
Training	1	<ul style="list-style-type: none">Create and assign a Training and Quality Assurance Coordinator position to plan, coordinate, and support the recruitment and training of new personnel. The candidate must be trained in Emergency Dispatch Quality Assurance (ED-Q) in order to perform QA/QI on EMD calls.Design and implement CTO training including presentation skills, adult learning styles, human relations.Create and implement Supervisor training geared specifically to Berkeley supervisors that is ECC specific. This training to include human relations, negotiation skills, intervention, skills, documenting employee development and performance, QA/QI methodologies, and ED-Q Certification.Implement continuing education & professional development program for all staff.
Technology Needs & Integration	2	<ul style="list-style-type: none">Work toward accelerated implementation of call-taking and dispatch software and programs.Design and implement a two-way CAD to CAD interface between the ECC and ACRECC.Design and implement a two-way CAD to CAD interface between the ECC and UC Berkeley PD.Review and revise incident types/CAD codes for SCU events.Implement fully automated station alerting technology for fire and EMS dispatch.Explore case management software for SCU events. This enables data
EMD Implementation	2	<ul style="list-style-type: none">Once staffing levels have been met, implementing a structured commercial protocol system for Emergency Medical Dispatch; and QA/QI system software (AQUA).Ensure that recruits are trained accordingly as a commercial protocol program trains your employees reducing the ECC training workload.





High-Level Implementation Plan		
Area of Focus	Priority	Strategy
		<ul style="list-style-type: none">• Medium and long-term results are standardization and consistency that is measurable through QA/QI processes, which also improves training, performance, and reduces risk & cost.
Accreditation	2	<ul style="list-style-type: none">• Pursue Accreditation through IAED EMD and EFD. Once established and have the staffing to do so, can also add CALEA and any Fire Service Accreditation that Police or Fire choose.
Behavioral Healthy/Crisis Response Program	2	<ul style="list-style-type: none">• Conduct a systems-mapping workshop as the initial first step for SCU December/2022 roll-out.• The workshop must outline the next steps required for planning and implementation of the SCU diversion pilot program.
Organizational Model	3	<ul style="list-style-type: none">• Staff the Communications Center Manager's position immediately• Require ECC management to have specific Public Safety Communications experience, education, and training.• Work towards an independent Communications Center with its own leadership and support model.• Establish a governance model where equal representation of Public Safety agencies exists• Ensure the model is sustainable for long term success and provides ECC management the autonomy, authority and support necessary to effectively lead the operation.

